



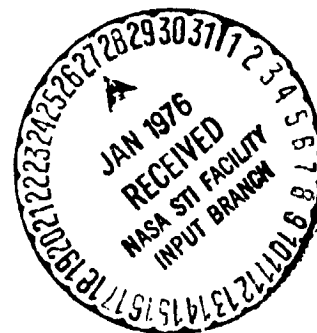
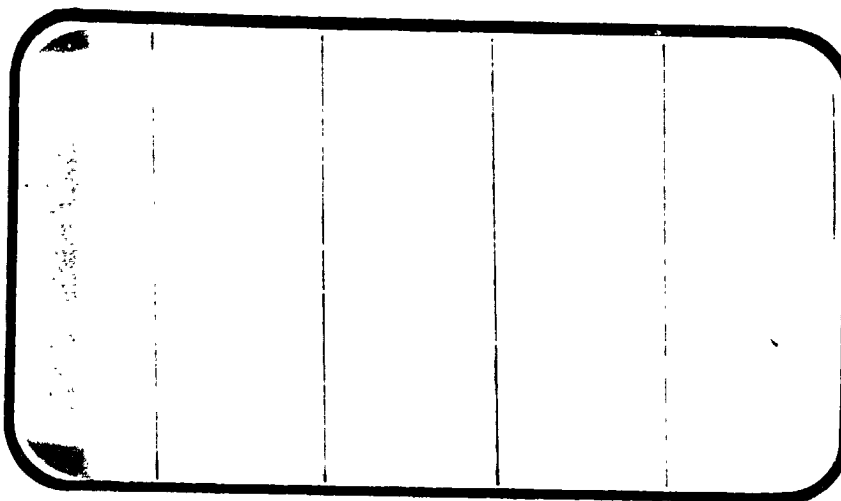
# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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(NASA-CR-141835) MATED AERODYNAMIC  
CHARACTERISTICS INVESTIGATION FOR 0.04-SCALE  
MODEL BOEING 747 CAM/EXTERNAL TANK (MODEL  
AX1284 E-5) COMBINATION IN THE UNIVERSITY OF  
WASHINGTON AERONAUTICAL LABORATORY F. K.

G3/C2 Unclass  
09380



SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANAGEMENT services

SPACE DIVISION



CHRYSLER  
CORPORATION

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MATED AERODYNAMIC CHARACTERISTICS INVESTIGATION  
FOR 0.04-SCALE MODEL BOEING 747 CAM/EXTERNAL  
TANK (MODEL AX1284 E-5) COMBINATION IN THE  
UNIVERSITY OF WASHINGTON AERONAUTICAL LABORATORY  
F. K. KIRSTEN WIND TUNNEL (CA11)

by

747 Aerodynamics, 747 Flight Controls  
and Wind Tunnel Test Staff  
The Boeing Co.

Prepared under NASA Contract Number NAS9-13247

by

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New Orleans, La. 70189

for

Engineering Analysis Division  
Johnson Space Center  
National Aeronautics and Space Administration  
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: UWAL 1146  
NASA Series Number: CA11  
Model Number: TE 1065 (Boeing 747-100), AX1284 (External Tank)  
Test Dates: 12 through 20 February 1975  
Occupancy Hours: 116

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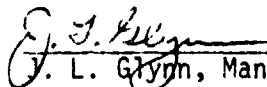
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MATED AERODYNAMIC CHARACTERISTICS INVESTIGATION  
FOR 0.04-SCALE MODEL BOEING 747 CAM/EXTERNAL  
TANK (MODEL AX1284 E-5) COMBINATION IN THE  
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F. K. KIRSTEN WIND TUNNEL (CA11)

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The Boeing Co.

ABSTRACT

Experimental investigations of the aerodynamic characteristics of a 0.04-scale ET force model in combination with a 0.04-scale Boeing 747 force model were conducted from Feb. 12-20, 1975, in the University of Washington Aeronautical Laboratory (UWAL) Wind Tunnel. Test purposes were 1) to determine ET airloads for selected configurations and 2) to determine the effectiveness of ET position, incidence, and support structure and 747 vertical stabilizing surfaces on stability, control, and performance of 747/ET combinations. The 747 was tested alone to establish baseline data and to verify test results. Six-component aerodynamic force and moment data were recorded for the 747 CAM and ET combination. Six-component force and moment data were also recorded for the ET, which was mounted on an internal balance supported by the 747. Data were recorded for angles of attack from  $-4^\circ$  to  $+24^\circ$  in  $2^\circ$  increments and angles of sideslip of  $0^\circ$ ,  $\pm 1^\circ$ ,  $\pm 2^\circ$ ,  $\pm 3^\circ$ ,  $\pm 4^\circ$ ,  $\pm 6^\circ$ ,  $\pm 8^\circ$ ,  $\pm 10^\circ$ ,  $\pm 12^\circ$ ,  $\pm 14^\circ$ ,  $\pm 16^\circ$ , and  $\pm 20^\circ$ . Testing was conducted at Mach 0.15 with dynamic pressure at 36 psf and unit Reynolds number of  $1.3 \times 10^6$  per foot.

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## PLOTTED COEFFICIENTS SCHEDULE:

- A) CL, CLM versus ALPHAW, CL versus CLM and CL versus CD
- B) CSL, CY, CLN versus BETA
- C) CAT, CLMT, CNT versus ALPHAW
- D) CAT, CLMT, CNT, CBLT, CVT, CYNT versus BETA

# NOMENCLATURE

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$a$		speed of sound; m/sec, ft/sec
$\alpha_{WDP}$	ALPHAW	747 wing design plane angle of attack, degrees
$\alpha_I$	ALPHAI	747 wing design plane angle of attack-uncorrected, degrees
$\beta$	BETA	747 angle of sideslip, degrees
$\beta_I$	BETAI	747 angle of sideslip-uncorrected, degrees
$\beta_T$	BETAT	external tank angle of sideslip, degrees
$\psi$	PSI	angle of yaw, degrees
$\phi_T$	RTANK	tank angle of roll, degrees
$\rho$	RHO	mass density; slugs per ft <sup>3</sup>
$M$	MACH	Mach number
$P$	PINF	freestream static pressure, psi
$P_{T1-4}$	PT1-4	tank cavity pressure at locations 1-4, psi
$q$	Q	dynamic pressure - corrected for blocking-PSF
$q_{ACT}$	QACT	dynamic pressure - set in test section-PSF
$RN/L$	RN/L	unit Reynolds number, per ft.
$V$		velocity, ft/sec.
C.G.		center of gravity
$b$	BREF	747 wing span; inches
MAC	MAC	747 wing mean aerodynamic chord; inches
$S$	SREF	747 wing area, ft <sup>2</sup>

# NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$i_T$	ITANK	external tank to 747 fuselage reference line angle of incidence degrees
$\Delta i_T$	DITANK	angle of incidence correction due to external tank load, degrees
$\delta_{RU/I}$		747 upper/lower rudder deflection angles; degrees
$\delta_R$	RUDDER	747 rudder deflection angle, degrees
$\delta_{RU}$	RUD-U	747 upper rudder deflection angle; degrees
$\delta_{RL}$	RUD-L	747 lower rudder deflection angle, degrees
$\delta_{RTU}$	RUdT-U	747 upper rudder tab deflection angle, degrees
$\delta_{RTL}$	RUdT-L	747 lower rudder tab deflection angle, degrees
$\delta_e$	ELEVTR	747 elevator deflection angle, degrees
$\delta_{eIB}$	ELV-IB	747 inboard elevator deflection angle, degrees
$\delta_{eOB}$	ELV-OB	747 outboard elevator deflection angle, degrees
$S_{WDP}$	STAB	747 horizontal stabilizer deflection angle with respect to wing design plane; degrees
$X_C$	INXC	747 longitudinal station, inches
$Y_C$	INYC	747 lateral station, inches
$Z_C$	INZC	747 vertical station, inches
$X_T$	INXT	external tank longitudinal station, inches

# NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$Y_T$	INYT	external tank lateral station, inches
$Z_T$	INZT	external tank vertical station, inches

## 747 BODY AXIS DATA

<u>Symbol</u>	<u>UWAL Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$C_N$	CZ	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
$C_A$	CX	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
$C_Y$	CY	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
$C_m$	CM	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS \text{ MAC}}$
$C_n$	CN	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
$C_l$	CR	CBL	Rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$

## EXTERNAL TANK BODY AXIS DATA

$C_{N_T}$	CZT	CNT	normal-force coefficient; $\frac{\text{normal force}}{qS}$ , Tank (747 Ref.)
$C_{A_T}$	CXT	CAT	axial-force coefficient; $\frac{\text{axial force}}{qS}$ , Tank (747 Ref.)
$C_{Y_T}$	CYT	CYT	side-force coefficient; $\frac{\text{side force}}{qS}$ , Tank (747 Ref.)
$C_{m_T}$	CMT	CLMT	pitching-moment coefficient; $\frac{\text{pitching moment, Tank (747 Ref.)}}{qS \text{ MAC}}$
$C_{n_T}$	CNT	CYNT	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$ , tank (747 Ref.)

# NOMENCLATURE (Continued)

## 747 STABILITY AXIS DATA

<u>Symbol</u>	<u>UWAL Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$C_L$	CL	CL	lift coefficient; $\frac{\text{lift}}{qS}$
$C_D$	CD	CD	drag coefficient; $\frac{\text{drag}}{qS}$
$C_Y$	CY	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
$C_m$	CM	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS \text{ MAC}}$
$C_n$	CN	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
$C_l$	CR	CSL	rolling-moment coefficient; $\frac{\text{rolling-moment}}{qSb}$

## EXTERNAL TANK STABILITY AXIS DATA

$C_{L-T}$	CLT	CLT	lift coefficient; $\frac{\text{lift}}{qS}$ , tank (747 Ref.)
$C_{D-T}$	CDT	CDT	drag coefficient; $\frac{\text{drag}}{qS}$ , tank (747 Ref.)
$C_{Y-T}$	CYT	CYT	side-force coefficient; $\frac{\text{side force}}{qS}$ tank (747 Ref.)
$C_{m-T}$	CMT	CLMT	pitching-moment coefficient; $\frac{\text{pitching moment, tank (747 Ref.)}}{qS \text{ MAC}}$
$C_{n-T}$	CNT	CLNT	yawing-moment coefficient; $\frac{\text{yawing moment (747 Ref.)}}{qSb}$

# NOMENCLATURE (Concluded)

<u>Symbol</u>	<u>UWAL Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$C_{l_T}$	CRT	CBLT	rolling moment coefficient; <u>rolling moment</u> , Tank (747 Ref.) $qSb$

## EXTERNAL TANK CAVITY PRESSURES

<u>Symbol</u>	<u>UWAL Symbol</u>	<u>Plot Symbol</u>	<u>Description</u>
$C_{p_{T1-4}}$	CPT1-4	DP1-4	external tank cavity pressure coef- ficient at locations 1 through 4; <u><math>PT_{1-4} - P</math></u> $q$
XMRP			longitudinal moment reference center, in. X*
YMRP			lateral moment reference center, in. Y*
ZMRP			vertical moment reference center, in. Z*

\* Note: Postscript indicates if carrier (C) or tank (T)

## CONFIGURATIONS INVESTIGATED

The test vehicle consisted of a 0.04-scale model of the Boeing 747 CAM and a 0.04-scale model of the Space Shuttle Vehicle External Tank. The 747 was tested separately and in the mated configuration with the External Tank. Six-component External Tank force data were obtained for two test configurations with a Boeing six-component internal balance (number 617A). The 747 model was mounted on the UWAL external balance, which measures six-component force data in the wind axis.

Testing was conducted over an angle of attack range of -4 to 24 degrees in 2-degree increments. Sideslip angles were -4 to +4 degrees in one-degree increments, from  $\pm 4^\circ$  to  $\pm 16$  degrees in 2-degree increments and  $\pm 20$  degrees at angles of attack of 2.1, 6.4, and 12.8 degrees. The 747 stabilizer deflections of 0, -2 and -4 degrees were tested. The 747 rudder deflections were set at 0 degrees, 0/25 degrees, 25/0 degrees, and 25/25 degrees for the upper and lower sections, respectively. The 747 elevators were tested at 0, 17, and -23 degrees. Ailerons and spoilers were fixed at zero degree. The tank was positioned on the 747 for study groups CA3, 1, 1A, 5, and 5A. External Tank force and moment data were taken with study groups 1 and 5. Study group 1A was at -5-degree incidence and study group 3A was at +3-degree incidence. All other study groups were tested at zero-degree incidence.

Model configuration notation is summarized below:

K<sub>1</sub> = B29A W45

M25/26 N57/58 T14

CONFIGURATIONS INVESTIGATED (Concluded)

$T_{28}$  = External tank without Orbiter attach struts

$T_{28.1}$  = External tank with Orbiter attach struts installed

A complete description of individual model components is given in Table III.

## TEST FACILITY DESCRIPTION

The UWAL tunnel is a closed circuit, double return type with an 8 x 12 foot test section vented to the atmosphere. Two synchronized fans, one in each return duct, are electrically driven and can develop wind velocities up to 250 mph (dynamic pressures up to 160 psf).

The balance system located directly below the test section is capable of measuring six components simultaneously. The method of model mounting, along with the balance system, allows testing over a wide range of pitch and yaw angles with rapid positioning possible for any combination of angles. The balance is designed to measure all forces and moments with respect to the wind axis at the balance-moment center located on the tunnel axis. The forces and moments are then transmitted to an automatic read-out system where the data are simultaneously punched out on IBM cards, typed on a data sheet, and plotted on automatic plotters. If desired, the balance support strut and fairing can be removed from the test section so that the test section is clear of all obstructions.

The automatic read-out equipment is capable of recording 3 six-component data points per minute. The forces and moments are separated by the balance and transmitted to the automatic read-out system, then simultaneously punched out on IBM cards, and typed out on a data sheet. Any four of the six components may be plotted on automatic plotters.

Data are then submitted to a CDC 6400 computer using a UWAL program designed to include all corrections which are to be made to the data.

### TEST FACILITY DESCRIPTION (Concluded)

The output from the computer consists of another set of IBM cards on which the final, corrected coefficients are punched. These cards are then printed out using an IBM listing machine and can be used directly for data comparison or used for plotting purposes.

## DATA REDUCTION

The aerodynamic forces and moments measured by the external and internal balances were reduced to coefficient form in the body and stability axis systems utilizing the following reference dimensions:

<u>Symbol</u>	<u>Definition</u>	<u>Model Scale</u>	<u>Full Scale</u>
SREF	area 747 wing, ft <sup>2</sup>	8.80	5500
BREF	span 747 wing, in.	93.92	2348
LREF	mean aerodynamic chord wing, in.	13.112	327.8
	747 moment reference center, in. $X_C$	53.596	1339.91
	747 moment reference center, in. $Z_C$	7.63	190.75
	tank moment reference center, in. $X_T$	53.92	1348.00
	tank moment reference center, in. $Z_T$	16.08	402.00

Moment data for the mated configuration were reduced about the 0.25 MAC of the 747 wing. External Tank six-component force data for study groups 1 and 5 were reduced to coefficient form about the tank MRC using 747 CAM reference areas and lengths.

The table below lists corresponding  $X_C$  and  $Z_C$  stations of the tank MRC.

<u>Study group No.</u>	<u><math>X_C</math> - (in.) Full Scale</u>	<u><math>X_C</math> - (in.) Model Scale</u>	<u><math>Z_C</math> - (in.) Full Scale</u>	<u><math>Z_C</math> - (in.) Model Scale</u>
1	1540.00	61.60	705.00	28.20
5	1520.025	60.80	649.00	25.96

Four external tank cavity pressures measured during these tests show that there was negligible airflow through the tank, so corrections to the balance measurements were not needed.

TABLE I.

[illegible]

TABLE II.

TEST: UWAL 1146		DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: 12-20 FEB 1975	
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES						NO. OF RUNS	TEST RUN NUMBER	PAGE NUMBER (P.C.F.)	
		01	02	STAB	W/L	STAB	W/L	OFF	OFF				
R60001	KIV9.1	A	O	OFF	OFF	OFF	OFF	OFF	OFF	1	1	35	
002	KIV9.1H15.1	A	O	0	0	0	0	0	0	1	2		
003	L	A	O	-2	L	L	L	L	L	1	3		
004	L	2	B	-2.07	L	L	L	L	L	1	4		
005	L	6	B	L	L	L	L	L	L	1	5		
006	L	12	B	L	L	L	L	L	L	1	6		
007	L	6	B	L	L	25/0	L	L	L	1	7		
008	L	6	B	L	L	25/25	L	L	L	1	8		
009	L	6	B	L	L	0/25	L	L	L	1	9		
010	KIV9.1H15.6	A	O	-1.92	L	0/0	L	L	L	1	10		
011	L	A	O	L	L	23/43	L	L	L	1	11		
012	KIV9.1H15.1	A	O	-1.90	L	L	L	L	L	1	12		
013	L	A	O	-1.92	L	17/17	L	L	L	1	13		
014	KIV9.1H15.6	A	O	L	L	L	L	L	L	1	14		
015	KIV9.1H15.1	A	O	-1.9	L	0/0	L	L	L	1	15		
016	KIV9.1H15.1	2	B	-1.87	L	OFF	L	L	L	1	16		
017	L	6	B	L	L	L	L	L	L	1	17		
018	L	12	B	L	L	L	L	L	L	1	18		
CL		13	19	25	31	37	43	49	55	61	ALPHA WIRETA		
A (ALPHA) = 4, 2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24		K 1 = 829A W45 M25/26 N57/58 T14											
B (BETA) = -20, -16, -14, -12, -10, -8, -6, -4, -3, -2, -1, 0, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 20													

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TEST: UWAL 1146		TABLE II. - Continued.										DATE: 12-20 FEB 1975									
DATA SET RUN NUMBER COLLATION SUMMARY		PARAMETERS/VALUES										FACT NUMBERS (PSF)									
DATA SET IDENTIFIER	CONFIGURATION	SCHD.	STPS	STPS	STPS	STPS	STPS	STPS	STPS	STPS	STPS	NO. OF RUNS	FACT NUMBERS (PSF)	FACT NUMBERS (PSF)	FACT NUMBERS (PSF)	FACT NUMBERS (PSF)	FACT NUMBERS (PSF)	FACT NUMBERS (PSF)	FACT NUMBERS (PSF)	FACT NUMBERS (PSF)	FACT NUMBERS (PSF)
RG0019	KIH15.1AT38AT37T28	6 B	190	190	190	190	190	190	190	190	190	1	19	19	19	19	19	19	19	19	19
020	KIH15.1V9.1AT38AT37T28	6 B	190	190	190	190	190	190	190	190	190	1	20	20	20	20	20	20	20	20	20
021	KIH15.6V9.1AT38AT37T28	6 B	190	190	190	190	190	190	190	190	190	1	21	21	21	21	21	21	21	21	21
022	KIH15.6V9.4AT38AT37T28	6 B	190	190	190	190	190	190	190	190	190	1	22	22	22	22	22	22	22	22	22
023	✓	6 B	190	190	190	190	190	190	190	190	190	1	23	23	23	23	23	23	23	23	23
024	KIH15.6V9.4AT76AT71T28	6 B	190	190	190	190	190	190	190	190	190	1	24	24	24	24	24	24	24	24	24
025	KIH15.6V9.4AT70AT71T28	6 B	190	190	190	190	190	190	190	190	190	1	25	25	25	25	25	25	25	25	25
026	✓	6 B	190	190	190	190	190	190	190	190	190	1	26	26	26	26	26	26	26	26	26
027	✓	A O	190	190	190	190	190	190	190	190	190	1	27	27	27	27	27	27	27	27	27
028	KIH15.6V9.4AT76AT71T28	A O	190	190	190	190	190	190	190	190	190	1	28	28	28	28	28	28	28	28	28
029	✓	6 B	190	190	190	190	190	190	190	190	190	1	29	29	29	29	29	29	29	29	29
030	KIH15.7V9.4AT70AT71T28	6 B	190	190	190	190	190	190	190	190	190	1	30	30	30	30	30	30	30	30	30
031	KIH15.1V9.4AT70AT71T28	6 B	190	190	190	190	190	190	190	190	190	1	31	31	31	31	31	31	31	31	31
032	KIH15.1V9.4AT72AT73T28	6 B	190	190	190	190	190	190	190	190	190	1	32	32	32	32	32	32	32	32	32
033	KIH15.1V9.4AT72AT73T28	6 B	190	190	190	190	190	190	190	190	190	1	33	33	33	33	33	33	33	33	33
034	KIH15.6V9.4AT70AT71T28	6 B	190	190	190	190	190	190	190	190	190	1	34	34	34	34	34	34	34	34	34
035	KIH15.6V9.1AT70AT71T28	6 B	190	190	190	190	190	190	190	190	190	1	35	35	35	35	35	35	35	35	35
036	KIH15.1V9.1AT70AT71T28	6 B	190	190	190	190	190	190	190	190	190	1	36	36	36	36	36	36	36	36	36

TABLE II. - Continued.

TEST: UWAL 114-6		DATA SET RUN NUMBER COLLATION SUMMARY										DATE: 12-20 FEB 1975	
DATA SET IDENTIFIER	CONFIGURATION	SCHD.	PARAMETERS/VALUES						NO. OF RUNS	FACT. NO. (PSF)			
			CI	STAS	STAS	STAS	STAS	STAS		35			
R60037	K1H15.1 AT70AT71T28.1	6 B	-1%	0	0	1			1	37			
038	K1V9.1 AT70AT71T28.1	A O	OFF	0	0	1			1	38			
039	K1V9.1H15.6C1V11A7B6AT87T28.1	A O	-1.7%	0	0	5			1	39			
040	"	6 B	1	1	1	1			1	40			
041	K1V9.1H15.6C1V11A7B6AT87T28.1	6 B	1	1	1	1			1	41			
042	"	A O	1	1	1	1			1	42			
043	"	6 B	1	1	1	1			1	43			
044	K1V9.1H15.6C1V12A7B6AT87T28.1	6 B	1	1	1	1			1	44			
045	K1V9.1H15.6C1 AT86AT87T28.1	6 B	1	1	1	1			1	45			
046	K1V9.1H15.1C1 AT86AT87T28.1	6 B	1	1	1	1			1	46			
047	K1 H15.1C1 AT86AT87T28.1	6 B	1	1	1	1			1	47			
048	K1V9.1 C1 AT86AT87T28.1	A O	OFF	0	0	1			1	48			
049	K1V9.1 C1 AT90AT91T28.1	A O	1	1	1	1	5A		1	49			
050	K1 H15.1C1 AT90AT91T28.1	6 B	-1.92	0	0	1			1	50			
051	K1V9.1H15.1C1AT90AT91T28.1	6 B	1	1	1	1			1	51			
052	K1V9.1H15.6C1AT90AT91T28.1	6 B	1	1	1	1			1	52			
053	K1V9.1H15.6V12C1A7B6AT87T28.1	6 B	1	1	1	1			1	53			
054	K1V9.1 H15.6V11C1A7B6AT87T28.1	6 B	1	1	1	1			1	54			

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TABLE II. - Continued.

TEST : UVAL 1146		DATA SET RUN NUMBER COLLATION SUMMARY										DATE : 12-20 FEB 1975																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
DATA SET IDENTIFIER	CONFIGURATION	SCHD.	PARAMETERS/VALUES										NO. OF RUNS	9 ALT. MEASUREMENTS (PSF)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
			$\alpha_1$	$\beta_1$	STAB	W/O	W/O	STAB	W/O	STAB	W/O	STAB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
RGO 055	KIV9.H15.6 VILC1A700A728.1	A	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE II. - Continued.

TEST: UWAL 1146			DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: 12-20 FEB 1975																			
DATA SET IDENTIFIER	CONFIGURATION	SCHD.	PARAMETERS/VALUES										NO. OF RUNS	TEST RUN NUMBERS																		
			STAB	STAB	STAB	STAB	STAB	STAB	STAB	STAB	STAB	STAB		35	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
RGO 074	K1H15.1 A770AT71 T28.1	2 B	-1.93	0%	OFF	0	0	0	0	0	0	0	1	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
075	✓	12 B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
077	K1V9.4H15.7 AT70AT71 T28.1	2 B	✓	✓	0%	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
078	✓	6 B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
079	✓	12 B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
080	✓	A O	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
081	✓	2 B	✓	✓	25/25	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
082	✓	6 B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
083	✓	12 B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
084	✓	6 B	✓	✓	25/0	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
085	✓	✓	✓	✓	0/25	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
086	✓	A O	-1.90	17/17	0/0	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
087	✓	A O	✓	23/23	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
088	✓	A O	+0.02	0/0	0/0	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
089	✓	A O	-4.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
090	K1V9.1H15.7 AT70AT71 T28.1	2 B	-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
091	✓	6 B	-1.96	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
092	✓	12 B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	74	75	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
			7	13	19	25	31	37	43	49	55	61	67	75																		
			COEFFICIENTS										ICAR 11 ICAR 12 ICAR 13																			
			α or β										SCHEDULES																			

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TABLE II. - Continued.

TEST: UWAL 1146		DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: 12-20 FEB 1975																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
DATA SET IDENTIFIER	CONFIGURATION	SCHD.	PARAMETERS/VALUES							NO. IS	TEST RUN NUMBERS (PSF)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			STAB	LEV	100	ITANK	STAND	STUDY	IS		35	93	94																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
RG0 093	K1V9.1H15.1A70A71 T28.1	12 B	-1.96	0/0	0/0	0	0	1	1	35	93																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

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DATE: 12-20 FEB 1975

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TABLE IIIa MODEL DIMENSIONAL DATA

A. Carrier

MODEL COMPONENT : BODY - B29A

GENERAL DESCRIPTION : Fuselage for the 747-100/200 airplane.

747 MODEL SCALE: 0.040 MODEL: 1065

DRAWING NUMBER : 65-71436

DIMENSIONS :

	FULL SCALE Feet	MODEL SCALE Inches
Length	<u>225.17</u>	<u>108.08</u>
Max Width	<u>22.71</u>	<u>10.90</u>
Max Depth Height	<u>25.52</u>	<u>12.25</u>
Fineness Ratio	<u>10.57</u>	<u>10.57</u>
Area	<u>                    </u>	<u>                    </u>
Max. Cross-Sectional	<u>                    </u>	<u>                    </u>
Planform	<u>                    </u>	<u>                    </u>
Wetted	<u>                    </u>	<u>                    </u>
Base	<u>                    </u>	<u>                    </u>

TABLE IIIa (Cont'd)

MODEL COMPONENT: HORIZONTAL - H15.1

GENERAL DESCRIPTION: Swept horizontal tail on the fuselage at MS 102.56,  
WL 12.45, and HBL 6.98 with variable incidence pivot (located at 103.76 and  
WL 11.70).

747 MODEL SCALE: 0.040 MODEL: 1065

DRAWING NUMBER: 65-74129

DIMENSIONS: FULL-SCALE (FT) MODEL SCALE (IN.)

## TOTAL DATA

Area<sup>2</sup>

Planform	<u>1470.0</u>	<u>2.35 SQ. FT.</u>
Wetted	<u>          </u>	<u>          </u>
Span (equivalent)	<u>72.75</u>	<u>34.92</u>
Aspect Ratio	<u>3.6</u>	<u>3.6</u>
Rate of Taper	<u>          </u>	<u>          </u>
Taper Ratio	<u>0.25</u>	<u>0.25</u>
Dihedral Angle, degrees	<u>7</u>	<u>7</u>
Incidence Angle, degrees	<u>VARIABLE</u>	<u>VARIABLE</u>
Aerodynamic Twist, degrees	<u>          </u>	<u>          </u>
Toe-In Angle	<u>          </u>	<u>          </u>
Cant Angle	<u>          </u>	<u>          </u>
Sweep Back Angles, degrees	<u>          </u>	<u>          </u>
Leading Edge	<u>43</u>	<u>43</u>
Trailing Edge	<u>          </u>	<u>          </u>
0.25 Element Line	<u>37.5</u>	<u>37.5</u>
Chords:		
Root (Wing Sta. x 0.0)	<u>32.33</u>	<u>15.520</u>
Tip, (equivalent)	<u>7.92</u>	<u>3.800</u>
MAC	<u>271.6 IN.</u>	<u>10.864</u>
Fus. Sta. of .25 MAC	<u>2564 IN.</u>	<u>102.56</u>
W.P. of .25 MAC	<u>311.25 IN.</u>	<u>12.45</u>
B.L. of .25 MAC	<u>          </u>	<u>          </u>

## Airfoil Section

Root

Tip

## EXPOSED DATA

Area	<u>          </u>	<u>          </u>
Span, (equivalent)	<u>          </u>	<u>          </u>
Aspect Ratio	<u>          </u>	<u>          </u>
Taper Ratio	<u>          </u>	<u>          </u>
Chords	<u>          </u>	<u>          </u>
Root	<u>          </u>	<u>          </u>
Tip	<u>          </u>	<u>          </u>
MAC	<u>          </u>	<u>          </u>
Fus. Sta. of .25 MAC	<u>          </u>	<u>          </u>
W.P. of .25 MAC	<u>          </u>	<u>          </u>
B.L. of .25 MAC	<u>          </u>	<u>          </u>

TABLE IIIa (Cont'd)

MODEL COMPONENT: HORIZONTAL - H<sub>15.6</sub>

GENERAL DESCRIPTION: H<sub>15.1</sub> with 200 sq. ft. tip fins mounted on the horizontal at HBL 17.22 in vertical plane at BEL 17.09.

747 MODEL SCALE: 0.040

MODEL: 1065, 1284

DRAWING NO.: S.O. 1284-78, -80, 70.

DIMENSIONS: (One fin)

	<u>FULL SCALE (FT)</u>	<u>MODEL SCALE (IN.)</u>
Area <sup>2</sup> -	<u>200</u>	<u>46.1</u>
Chord	<u>9.54</u>	<u>4.582</u>
Span	<u>20.96</u>	<u>10.06</u>
Max. thickness	<u>0.86</u>	<u>0.412</u>

TABLE IIIa (Cont'd)

MODEL COMPONENT: HORIZONTAL - H<sub>15.7</sub>

GENERAL DESCRIPTION: H<sub>15.1</sub> with 280 sq. ft. tip fins mounted on the horizontal at HBL 17.22 in vertical plane at BBL 17.09

DRAWING NO.: S.O. 1284-76, -78, -80

747 MODEL SCALE: 0.040

MODEL: 1065, 1284

DIMENSIONS: (One fin)

	<u>FULL SCALE (FT.)</u>	<u>MODEL SCALE (IN.)</u>
Area <sup>2</sup>	<u>280.0</u>	<u>64.51</u>
Chord	<u>11.29</u>	<u>5.421</u>
Span	<u>24.79</u>	<u>11.90</u>
Max. thickness	<u>1.01</u>	<u>0.486</u>

TABLE IIIa (Cont'd)

## MODEL DIMENSIONAL DATA

MODEL COMPONENT : Horizontal Tail - H 15.11GENERAL DESCRIPTION : H15.1 with 400 sq. ft. Tip FinsDRAWING NUMBER SO 1284 - 107, - 115

MODEL : 1065, 1284

MODEL SCALE : 0.04

DIMENSIONS (One fin)	FULL SCALE	MODEL SCALE
Area (ft <sup>2</sup> )	<u>400</u>	<u>0.64</u>
Span (equivalent) ~ INS.	<u>355.98</u>	<u>14.226</u>
Inb'd equivalent chord	<u>          </u>	<u>          </u>
Outb'd equivalent chord	<u>          </u>	<u>          </u>
Ratio movable surface chord/ total surface chord	<u>          </u>	<u>          </u>
At Inb'd equiv. chord	<u>          </u>	<u>          </u>
At Outb'd equiv. chord	<u>          </u>	<u>          </u>
Sweep Back Angles, degrees	<u>0</u>	<u>0</u>
Leading Edge	<u>          </u>	<u>          </u>
Trailing Edge	<u>          </u>	<u>          </u>
Hingeline	<u>          </u>	<u>          </u>
Area Moment (Normal to hinge line)	<u>          </u>	<u>          </u>
CHORD = MAC      INCHES	<u>161.83</u>	<u>6.478</u>
Aspect Ratio	<u>2.2</u>	<u>2.2</u>
Taper Ratio	<u>1.0</u>	<u>1.0</u>
MAY THICKNESS - IN	<u>14.565</u>	<u>0.583</u>

TABLE IIIa (Cont'd)  
MODEL DIMENSIONAL DATA

MODEL COMPONENT : Horizontal Tail - H15.12

GENERAL DESCRIPTION : H15.1 WITH 200 SQ FT TIP FINS MOUNTED ON THE  
HORIZONTAL AT HBL 17.22 IN VERTICAL PLANE AT BBL 17.09 AND WITH  
280 SQ FT VERTICAL FINS MOUNTED INBOARD AT HBL 11.64 IN  
VERTICAL PLANE AT BBL 11.55

DRAWING NUMBER 50.1284-70,-78,-80,-76

MODEL : 1065, 1284

MODEL SCALE : 0.04

DIMENSIONS (One fin)

	FULL SCALE (FT)		MODEL SCALE (IN.)	
Area <sup>2</sup>	200	280	46.1	64.51
Chord	4.54	11.29	4.582	5.421
Span (equivalent)	20.96	24.79	10.06	11.90
Max thickness	0.86	1.01	.412	0.486
Inb'd equivalent chord				
Outb'd equivalent chord				
Ratio movable surface chord/ total surface chord				
At Inb'd equiv. chord				
At Outb'd equiv. chord				
Sweep Back Angles, degrees				
Leading Edge				
Trailing Edge				
Hingeline				
Area Moment (Normal to hinge line)				

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TABLE IIIa (Cont'd)

MODEL COMPONENT: NACELLE STRUT - M<sub>25</sub>

GENERAL DESCRIPTION: Inboard nacelle strut located at WBL 18.80 at the wing leading edge.

747 MODEL SCALE: 0.0140  
DRAWING NO: S. O. 1065-31, -42, -46  
DIMENSIONS:

MODEL: 1065

Canted inboard, deg.

FULL SCALE

MODEL SCALE

2

2

For use with

N<sub>57</sub>

WBL location

18.800

TABLE IIIa (Cont'd).

MODEL COMPONENT: NACELLE STRUT - M26

GENERAL DESCRIPTION: Outboard nacelle strut located at the wing leading edge.

747 MODEL SCALE: 0.040 MODEL: 1065

DRAWING NO.: S.O. 1065-31, -42, -46, -350

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Canted inboard, deg.	<u>2</u>	<u>2</u>
WBL location		<u>33.360</u>
For use with		<u>N57</u>

TABLE IIIa (Cont'd)

MODEL COMPONENT : NACELLES - N57

GENERAL DESCRIPTION : Flow-through inboard 747-100 nacelle mounted  
on nacelle strut at WBL 19.761. Nacelle centerline canted inboard 20°.  
Inlet tilted 4° down with respect to engine centerline.

747 MODEL SCALE: 0.040 MODEL: 1065

DRAWING NUMBER : S.O. 1065-15, -46, -314, -315

DIMENSIONS :

FULL SCALE (ft) MODEL SCALE (in.)

Length	Cowl	<u>8.6</u>	<u>4.136</u>
	Cowl + Engine	<u>17.9</u>	<u>8.6</u>
Max Diameter		<u>8.5</u>	<u>4.1</u>
Hilite Diameter		<u>7.3</u>	<u>3.502</u>
Fineness Ratio		<u>          </u>	<u>          </u>
Area		<u>          </u>	<u>          </u>
Max. Cross-Sectional		<u>          </u>	<u>          </u>
Planform		<u>          </u>	<u>          </u>
Wetted		<u>          </u>	<u>          </u>
Base		<u>          </u>	<u>          </u>

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TABLE IIIa (Cont'd)

MODEL COMPONENT NACELLES - N58

GENERAL DESCRIPTION: Flow-through outboard 247-100 nacelle mounted  
on strut at MBL 33.900. Nacelle centerline canted 2° inboard.  
Inlet tilted 4° down with respect to engine centerline.

MODEL SCALE: 0.040 7/17 MODEL: 1065DRAWING NUMBER: 3.0. 1065-15, -46, -314, -315

## DIMENSIONS:

FULL SCALE (ft) MODEL SCALE (in.)

	Cowl	8.6	4.136
Length	Cowl + Engine	17.9	8.6
Max Diameter		8.5	4.1
Hilite Diameter		7.3	3.502
Fineness Ratio			
Area			
	Max. Cross-Sectional		
	Planform		
	Wetted		
	Base		

TABLE IIIa (Cont'd)

MODEL COMPONENT: FLAP TRACK FAIRING - T14

GENERAL DESCRIPTION: Fairings located at WBL 9.408, 14.120, 23.299 and 29.753.

747 MODEL SCALE: 0.040

MODEL: 1065

DRAWING NO.: S.O. 1065-84, -124, -135

DIMENSIONS:

WBL locations

FULL SCALE (FT)

MODEL SCALE (IN)

9.408

14.120

23.399

29.753

Use with clean wing and

F8.1

F8.2

F9.1

F9.2

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TABLE IIIa (Cont'd)

MODEL COMPONENT: VERTICAL - V<sub>9.1</sub>GENERAL DESCRIPTION: Sweep vertical tail mounted on the fuselage centerline.747 MODEL SCALE: 0.040MODEL: 1065DRAWING NUMBER: 65-74142 S.O. 1065-359, -426DIMENSIONS:FULL-SCALEMODEL SCALEFT.IN.TOTAL DATAArea (Ft<sup>2</sup>)

Planform

830.01.328 Ft<sup>2</sup>

Wetted

Span (equivalent)

32.215.460

Aspect Ratio

1.251.25

Ratio of Taper

Taper Ratio

0.340.34

Dihedral Angle, degrees

Incidence Angle, degrees

Aerodynamic Twist, degrees

Toe-In Angle

Cant Angle

Sweep Back Angles, degrees

Leading Edge

50.1250.12

Trailing Edge

2222

0.25 Element Line

4545

Chords:

Root (Wing Sta. 0.0)

38.513.478

Tip, (equivalent)

13.086.277

MAC

334.16 IN.13.37

Fus. Sta. of .25 MAC

2523.5 IN.100.04

W.P. of .25 MAC

528 IN.21.122

B.L. of .25 MAC

Airfoil Section

Root

Tip

EXPOSED DATA

Area

Span, (equivalent)

Aspect Ratio

Taper Ratio

Chords

Root

Tip

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

TABLE IIIa. Concluded.

MODEL COMPONENT: VERTICAL - V<sub>9.4</sub>GENERAL DESCRIPTION: Vertical tail (V<sub>9.1</sub>) with a 4.8 IN. tip extension  
(10 ft. full scale).

747

MODEL SCALE: 0.040

MODEL: 1065, 1284

DRAWING NUMBER: S.O. 1284-30, 1065-382DIMENSIONS:FULL-SCALEMODEL SCALEFT.IN.TOTAL DATAArea (FT)<sup>2</sup>

Planform

921

1.4736

Wetted

Span (equivalent)

42.2

20.256

Aspect Ratio

1.93

1.93

Rate of Taper

Taper Ratio

0.13

0.13

Dihedral Angle, degrees

Incidence Angle, degrees

Aerodynamic Twist, degrees

Toe-In Angle

Cant Angle

Sweep Back Angles, degrees

Leading Edge

50.12

50.12

Trailing Edge

22

22

0.25 Element Line

Chords:

Root (Wing Sta. 0.0)

38.46

18.478

Tip, (equivalent)

5.195

2.494

Total height

42.21

20.26

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

Airfoil Section

Root

Tip

EXPOSED DATA

Area

Span, (equivalent)

Aspect Ratio

Taper Ratio

Chords

Root

Tip

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

TABLE II  
B. External Tank

MODEL COMPONENT: ATTACH STRUCTURE - AT 37

**GENERAL DESCRIPTION:** A weldment of 3/8 diameter to 5/8 diameter rods at aft attach points.

MODEL SCALE: 0.040

747 Model      Model 1284

DRAWING NO.: Boeing S.O. 1284-82, -83

**DIMENSIONS:**

**MEMBER**

FULL SCALE

MODEL SCALE

(IN.)

( IN. )

747 MS

#1 (Aft)

1755

(IN.)  
70.20

747 W.L.

489.0

19.56

747 B.L.

 $\oplus$ 

0.0

#2 (Forward)

Diameter, In.

#1

#2

TABLE IIb (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>38</sub>

GENERAL DESCRIPTION: A weldment of 3/8 diameter to 5/8 diameter  
rods at forward attach points.

MODEL SCALE: 0.040

MODEL 1284

DRAWING NO.: Boeing S.O. 1284-82, -83

DIMENSIONS:	MEMBER	FULL SCALE (IN.)	MODEL SCALE (IN.)
	#1 (Aft)	_____	_____
		_____	_____
		_____	_____
		_____	_____
		_____	_____
		_____	_____
		_____	_____
	#2 (Forward)	_____	_____
747 MS		<u>830.00</u>	<u>33.20</u>
747 W.L.		<u>587.5</u>	<u>23.50</u>
747 B.L.		<u>122.0</u>	<u>4.88</u> -
		_____	_____
		_____	_____
Diameter, In.	#1	_____	_____
	#2	_____	_____

TABLE III b (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>70</sub>

GENERAL DESCRIPTION: A welded rod assembly to support the tank on the 747 at forward attach points. Tank incidence is 0 degree.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284, -131, -120-1, -120-6

DIMENSIONS	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Attach point on 747		
Number of struts	4	4
Diameter, In. (Cross tie at top of body)	15	0.562
Location, In.:		
BS 747	790.00	31.600
BWL 747	305.00	12.200
747	114.50	4.580
Attach point on tank		
BS 747	830.00	33.200
BWL 747	646.00	25.840
BBL 747	169.50	6.780
BS Tank	2058.00	82.320

TABLE III b (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>71</sub>

GENERAL DESCRIPTION: A welded rod assembly to support the tank on the 747 at aft attach points. Tank incidence is 0 degree.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284, -123, -112-1, -112-2, -118-1, -118-4

DIMENSIONS		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Aft Attach Points:			
Attach point on 747:			
Number of Struts		6	6.
Diameter In. - Fwd Leg		14.0	0.562
Aft Leg		16.0	0.625
Cross Tie at Top of Body		6.0	0.25
Location, in.			
Forward:	BS 747	1610.00	64.400
	BWL 747	313.25	12.530
	BBL 747	108.00	4.320
Aft:	BS747	1950.00	78.000
	BWL 747	200.00	8.000
	BBL 747	132.15	5.286
Attach point on Tank:			
BS 747		1902.3	76.092
BWL 747		703.00	28.120
BBL 747		180.75	7.230
BS Tank		985.70	39.428
WL Tank		400.00	16.00

TABLE IIIb (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>72</sub>

GENERAL DESCRIPTION: STUDY Configuration 1 forward attach point. A welded rod assembly to support the tank on the 747. Tank incidence = 0°. Dummy cross bracing attached tangent to 747 body, up and across body to opposite strut with 1/2" clearance between diagonal & tank. Forward attach diagonals downstream & touching sidebraces. Aft diagonal upstream of & touching side braces.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284-131, -120-1, -120-6  
 Diagonal Strut: S.O. 1284-152

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Attach point on 747		
Number of struts	5	
Diameter, In.	15.0	0.562
Diagonal Strut	18.0	0.75
Cross Tie at Top of Body	6.0	0.25
Location, In.		
BS 747	790.0	31.60
BWL 747	305.0	12.20
BBL 747	114.5	4.58
Attach point on Tank		
BS 747	830.0	33.20
BWL 747	646.0	25.84
BBL 747	169.5	6.78
BS Tank	2058.0	82.32

TABLE IIIb. (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>72.1</sub>

GENERAL DESCRIPTION: A welded rod assembly to support the tank on the 747.  
 Tank incidence is 0°. Dummy diagonal cross bracing between Attach Structures at both forward & aft Sta. Cross ties attached tangent to 747 body up and across to opposite strut with 1/2" clearance between diagonals and tank.  
 Forward attach diagonals downstream and touching sidebraces.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284

DIMENSIONS:		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Attach point on 747:			
No. of struts		5	5
Strut Diameter, In.		15.00	0.562
Diagonal Diameter, In.		1.25	0.05
Cross tie at top of body	Diameter, In.	6.00	0.25
Location, In.:	BS 747	790.00	31.600
	BWL 747	305.00	12.200
	BS Tank	114.50	4.580
Attach point on Tank:			
BS 747		830.00	33.200
BWL 747		646.00	25.840
BBL 747		169.50	6.780
BS Tank		2058.00	82.320

TABLE IIIb. (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>73</sub>

GENERAL DESCRIPTION: Study Config. 1 aft attach structure. A welded rod assembly to support the tank on the 747. Tank incidence 0°. Dummy cross-bracing attached tangent to 747 body, up and across body to opposite strut with 1/2 inch clearance between diagonal & tank. Fwd attach diagonals downstream & touching sidebraces.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284, -131, -120-1, -120-6  
 Diag. Strut -152.

DIMENSIONS:		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Attach Point on 747:			
Number of struts		7	7
Diameter, In.	Fwd Leg	14.0	0.562
	Aft Leg	16.0	0.625
	Cross tie at top of body	6.0	0.25
	(Diagonal Strut)	12.0	0.50
Location, In.			
Forward:	BS 747	1610.0	64.400
	BWL 747	313.25	12.530
	BBL 747	108.0	4.320
Aft	BS 747	1950.00	78.000
	BWL 747	200.0	8.000
	BBL 747	132.15	5.286
Attach Point on Tank:			
	BS 747	1902.3	76.092
	BWL 747	703.0	28.120
	BBL 747	180.75	7.230
	BS Tank	985.70	39.428
	WL Tank	400.00	16.000

TABLE IIb. (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>73.1</sub>

GENERAL DESCRIPTION: A welded rod assembly to support the tank on the 747.  
 Tank incidence is 0°. Dummy diagonal cross bracing between attach structures at both forward and aft attach stations. Cross ties attached tangent to 747 body--up and across to opposite strut with 1/2" clearance between diagonals and tank. Aft diagonals upstream of and touching side braces.

MODEL SCALE: 0.040

DRAWING NO.: S.O. 1284.

DIMENSIONS:		<u>FULL SCALE</u>	<u>MODEL SCALE</u>	
Attach point on 747:				
Number of struts		7	7	
Strut Diameter, In.	Fwd Leg	14.0	0.562	
	Aft Leg	16.0	0.625	
Diagonal Diameter, In.		1.25	0.05	
Diameter of Cross tie at top of body, In.		6.0	0.250	
Location, In.:	Fwd	{ BS 747	1610.0	64.400
		{ BWL 747	313.25	12.530
		{ BBL 747	108.0	4.320
	Aft	{ BS 747	1950.0	78.000
		{ BWL 747	200.00	8.000
		{ BBL 747	132.15	5.286
Attach Point on Tank:				
BS 747		1902.3	76.092	
BWL 747		703.0	28.120	
BBL 747		180.75	7.230	
BS Tank		985.70	39.428	
WL Tank		400.00	16.000	

TABLE III b(Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>76</sub>

GENERAL DESCRIPTION: A welded rod assembly to support the tank on the 747. Tank incidence is -5°.

MODEL SCALE: 0.040

DRAWING NO.: S.O. 1284 -131, -120-2, -12007.

DIMENSIONS:		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Attach Point on 747:			
Number of Struts		4	4
Diameter, In.	Cross tie at top of body	15	0.562
Location, In.		6	0.25
BS 747		790.00	31.600
BWL 747		305.00	12.200
EBL 747		114.50	4.580
Attach point on Tank:			
BS747		839.05	33.562
BWL 747		552.75	22.110
EBL 747		169.50	6.780
BS Tank		2058.0	82.320

TABLE III b(Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>80</sub>

GENERAL DESCRIPTION: A welded rod assembly to support the tank on the 747. Tank incidence is +3°. Aft attach points.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284-123, -118-2, -118-5, -112-5, -112-6

DIMENSIONS: FULL SCALE      MODEL SCALE

Attach point on 747:

Number of struts		6	6.
Diameter, In.	Forward Leg	14	0.562
	Aft leg	16	0.625
Location, In. (Cross tie at top of body)		6	0.25
Fwd	BS 747	1427.0	57.080
	BWL 747	313.25	12.530
	BBL 747	108.00	4.320
Aft	BS 747	1750.5	70.020
	BWL 747	200.00	8.00
	BBL 747	132.15	5.286

Attach point on tank:

BS 747	1729.5	69.180
BWL 747	570.9	22.836
BBL 747	185.5	7.420
BS Tank	985.7	39.428
WL tank	400.00	16.00

TABLE III b (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>83</sub>

GENERAL DESCRIPTION: A welded rod assembly to support the tank on the

747. Tank incidence is +3°. Forward attach points.

MODEL SCALE: 0.040

DRAWING NO.: 1284-131, -120-5, -120-10.

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Attach point on 747:		
Number of struts	4	4
Diameter, In.	15	0.562
Location, Inc. (Cross tie at top of body)	6	0.25
BS747	650.00	26.000
BWL 747	305.00	12.200
BBL 747	113.8	4.552
Attach point on Tank:		
BS 747	655.7	26.228
BWL 747	570.1	22.804
BBL 747	169.5	6.780
BS tank	2058.0	83.320

TABLE IIb (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>86</sub>

GENERAL DESCRIPTION: A welded rod assembly to support the universal support assy (USA) on the 747. Incidence is 0°. The tank is mounted in the USA.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284 -133.

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Forward attach points:		
Attach point on 747:		
Number of struts	2	2
Diameter, in.	7.0	0.28
Location, in.		
BS747	680.00	27.20
BWL 747	372.00	14.88
BBL 747	66.30	2.65
Attach point on USA		
BS 747	680.00	27.20
BWL 747	602.00	24.08
BBL 747	Centerline	Centerline of USA
BS Tank	2058.00	83.320

TABLE IIB (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>87</sub>

GENERAL DESCRIPTION: A welded rod assembly to support the Universal Support Assembly (USA) on the 747. Incidence is 0°. The tank is mounted in the USA.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284-132, -134.

DIMENSIONS:

FULL SCALE

MODEL SCALE

Aft Attach Points

Attach point on 747

Number of Struts		6	6
Diameter, In.	Fwd Leg	16	0.625
	Aft Leg	18	0.719
Cross tie at top of body			
Location, In.			
Fwd	BS 747	1445.30	57.81
	BWL 747	313.50	12.54
	BBL 747	104.20	4.17
Aft	BS 747	1610.00	64.40
	BWL 747	313.50	12.54
	BBL 747	104.20	4.17

Attach point on USA

BS 747		1610.00	64.40
BWL 747		602.00	24.08
BBL 747		234.5	9.48*
BS Tank		985.7	39.428
WL Tank		400.00	16.00
Tank	BS 747	1882.325	75.293
Tank	WL 747	647.0	25.88

TABLE IIIb (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>89</sub>

GENERAL DESCRIPTION: A welded rod assy to support the Universal Support Assy (USA) on the 747. Incidence is 0°. The tank is mounted in the USA. Dummy cross bracing attached tangent to 747 body--up and across to opposite strut with 1/2" clearance between diagonal & tank. Aft diagonal upstream of & touching side braces. Aft attach points.

MODEL SCALE: 0.040

DRAWING NO.: S.O. 1284-132-134. Diagonals: -152.

## DIMENSIONS:

FULL SCALEMODEL SCALE

## Attach point on 747:

Number of struts		7	7
Diameter, In.:	Fwd leg	16.0	0.625
	Aft leg	18.0	0.719
	Cross tie & top of body	8.0	0.320
	Diag. Strut	14.0	0.560
Fwd	BS 747	1445.30	57.81
	BWL 747	313.50	12.54
	BBL 747	104.20	4.17
Aft	BS 747	1610.00	64.40
	BWL 747	313.50	12.54
	BBL 747	104.20	4.17

## Attach point on USA

BS 747		1610.00	64.40
BWL 747		602.00	24.08*
BBL 747		234.5	9.38
BS Tank		985.7	39.428
WL Tank		400.00	16.00
Tank	BS 747	1882.325	75.293
Tank	WL 747	703.00	28.12

\*Bottom of USA at centerline of USA

TABLE IIb (Cont'd)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>90</sub>

GENERAL DESCRIPTION: A welded rod assy to support the Universal Support Assy (USA) on the 747. Incidence angle is 0°. The tank is mounted in the USA.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284-135, -142, -141

DIMENSION:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Forward attach points		
Attach Point on 747		
Number of struts	2	2
Diameter, In.	7.0	0.28
Location, In.:		
BS 747	680.0	27.20
BWL 747	372.0	14.88
BBL 747	66.25	2.65
Attach point on USA		
BS 747	700.00	28.00
BWL 747	658.00	26.32*
BBL 747	Centerline	Centerline
BS Tank	2058.00	83.32

\*Bottom of USA at centerline of USA.

TABLE III b. (Cont.)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>91</sub>

GENERAL DESCRIPTION: A welded rod assy to support the Universal Support Assy (USA) on the 747. Incidence is 0°. The tank is mounted in the USA.

MODEL SCALE: 0.040

DRAWING NO.: Boeing S.O. 1284-139, -136, -145

DIMENSIONS:		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Aft Attach Points			
Attach point on 747			
Number of struts		6	6
Diameter , In.	Fwd Leg	16	0.625
	Aft Leg	18	0.719
	Aft Legs	8	0.320*
Location, In.:			
Fwd	BS 747	1445.25	57.81
	BWL 747	313.5	12.54
	BBL 747	104.25	4.17
Aft	BS 747	1610.00	64.40
	BWL 747	313.25	12.54
	BBL 747	104.25	4.17
Attach point on USA:			
BS 747		1630.0	65.20
BWL 747		658.0	26.32
BBL 747		234.5	9.38*
BS Tank		985.7	39.428
WL Tank		400.0	16.00
Tank BS 747		1902.30	76.092
Tank WL747		703.00	28.15

\*Bottom of USA at centerline of USA.

TABLE III b (Cont'd)

MODEL COMPONENT: External Tank Universal Support Assembly - C<sub>1</sub>

GENERAL DESCRIPTION: C<sub>1</sub>, External Tank universal support assembly,  
including boom to tank attachments.

MODEL SCALE: 0.040

DRAWING NUMBER: Boeing No. S.O. 1284-125, -126, -127, -128.

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u> <u>(FT.)</u>	<u>MODEL SCALE</u> <u>(IN.)</u>
Length	<u>167.52</u>	<u>80.41</u>
Width	<u>46.58</u>	<u>22.36</u>
Dia. of Boom	<u>7.50</u>	<u>3.60</u>
Outb'd equivalent chord	<u>          </u>	<u>          </u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>          </u>	<u>          </u>
At Outb'd equiv. chord	<u>          </u>	<u>          </u>
Sweep Back Angles, degrees		
Leading Edge	<u>          </u>	<u>          </u>
Tailing Edg	<u>          </u>	<u>          </u>
Hingeline	<u>          </u>	<u>          </u>
Area Moment (Normal to hinge line)	<u>          </u>	<u>          </u>

TABLE IIIb (Cont'd)

MODEL COMPONENT : E.T. UNIVERSAL SUPPORT ASSEMBLY - C<sub>2</sub>

GENERAL DESCRIPTION : Same as C<sub>1</sub> with extended boom length.

MODEL SCALE: 0.040

DRAWING NUMBER . Boeing S. O. 1284-125, 126, 127, 128

DIMENSIONS :	FULL SCALE (FT.)	MODEL SCALE (IN.)
Length	<u>185.35</u>	<u>88.97</u>
Width	<u>46.58</u>	<u>22.36</u>
Dia. of Boom	<u>7.50</u>	<u>3.60</u>
Fineness Ratio	<u>          </u>	<u>          </u>
Area	<u>          </u>	<u>          </u>
Max. Cross-Sectional	<u>          </u>	<u>          </u>
Planform	<u>          </u>	<u>          </u>
Wetted	<u>          </u>	<u>          </u>
Base	<u>          </u>	<u>          </u>

TABLE IIb (Cont'd)

MODEL COMPONENT : EXTERNAL TANK - T<sub>28</sub>

GENERAL DESCRIPTION : T<sub>28</sub> space shuttle external tank with a  
right cylinder main body, an ogive nose fairing and an equal semiax\_s  
ellipsoidal tail fairing without orbiter attach struts,

MODEL SCALE: 0.040

DRAWING NUMBER: Boeing S.O. 1284-72

DIMENSIONS :	FULL SCALE (FT)	MODEL SCALE (IN.)
Length	<u>153.7</u>	<u>73.77</u>
Diameter	<u>27.58</u>	<u>13.24</u>
Max Depth	<u>          </u>	<u>          </u>
Fineness Ratio	<u>          </u>	<u>          </u>
Area	<u>          </u>	<u>          </u>
Max. Cross-Sectional	<u>          </u>	<u>          </u>
Planform	<u>          </u>	<u>          </u>
Wetted	<u>          </u>	<u>          </u>
Base	<u>          </u>	<u>          </u>

TABLE IIIb (Cont'd)

MODEL COMPONENT EXTERNAL TANK - T<sub>28.1</sub>

GENERAL DESCRIPTION : T<sub>29.1</sub> space shuttle external tank with a right cylinder main body, an ogive nose fairing and an equal semiaxes ellipsoidal tail fairing with Orbiter attach struts.

MODEL SCALE: 0.040

DRAWING NUMBER . Boeing S.O. 1284-72

DIMENSIONS :	FULL SCALE (FT.)	MODEL SCALE (IN.)
Length	<u>153.7</u>	<u>73.77</u>
Diameter	<u>27.58</u>	<u>13.24</u>
Max Depth	<u>          </u>	<u>          </u>
Fineness Ratio	<u>          </u>	<u>          </u>
Area	<u>          </u>	<u>          </u>
Max. Cross-Sectional	<u>          </u>	<u>          </u>
Planform	<u>          </u>	<u>          </u>
Wetted	<u>          </u>	<u>          </u>
Base	<u>          </u>	<u>          </u>

TABLE III b. (Cont.)

MODEL COMPONENT: VERTICAL - V<sub>10</sub>GENERAL DESCRIPTION: 301 sq ft Vertical Fins on the External TankUniversal Support BoomsMODEL: 1065, 1284MODEL SCALE: 0.04DRAWING NUMBER: AX 1284-116

## DIMENSIONS:

FULL SCALEMODEL SCALE

## TOTAL DATA

Area (Theo) - Ft <sup>2</sup>	301	0.4816
Planform		
Span (Theo) - In.	340	13.6
Aspect Ratio	2.67	2.67
Rate of Taper		
Taper Ratio	0.50	0.50
Sweep-Back Angles, Degrees.		
Leading Edge		
Trailing Edge		
0.25 Element Line	20.56	20.56
Chords:		
Root (Theo) WP Inches	170	6.80
Tip (Theo) WP Inches	85	3.40
MAC Inches	132.22	5.2888
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
B.L. of .25 MAC		

~~Half-Fin Section, Root to Tip~~~~MAC 482.94~~~~MAC 482.94~~ORIGINAL PAGE IS  
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TABLE IIIb (Cont'd)

MODEL COMPONENT: VERTICAL - V<sub>11</sub>GENERAL DESCRIPTION: 400 sq ft Vertical Fins on the External TankUniversal Support BoomsMODEL: 1065, 1284MODEL SCALE: 0.04DRAWING NUMBER: AX 1284-117

## DIMENSIONS:

FULL SCALEMODEL SCALE

## TOTAL DATA

Area (Theo) - Ft <sup>2</sup>	<u>400</u>	<u>0.64</u>
Planform		
Span (Theo) - In.	<u>392</u>	<u>15.70</u>
Aspect Ratio	<u>2.67</u>	<u>2.67</u>
Rate of Taper		
Taper Ratio	<u>0.50</u>	<u>0.50</u>
Sweep-Back Angles, Degrees.		
Leading Edge		
Trailing Edge		
0.25 Element Line	<u>20.56</u>	<u>20.56</u>
Chords:		
Root (Theo) WP	<u>196</u>	<u>7.85</u>
Tip (Theo) WP	<u>98</u>	<u>3.93</u>
MAC	<u>152.42</u>	<u>6.11</u>
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
B.L. of .25 MAC		

~~Airfoil Section, Root & Tip~~ ~~BAC 482-9%~~ ~~BAC 482-9%~~

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TABLE IIIb. Concluded.

MODEL COMPONENT: VERTICAL - V<sub>12</sub>

GENERAL DESCRIPTION: 600 sq. ft. vertical fins on the external tank universal support booms.

MODEL SCALE: 0.040

DRAWING NUMBER: Boeing AX1284-156

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
TOTAL DATA		
Area (Theo) - Ft <sup>2</sup>	<u>600.00</u>	<u>0.960</u>
Planform		
Span (Theo) - In.	<u>480.00</u>	<u>19.20</u>
Aspect Ratio	<u>2.67</u>	<u>2.67</u>
Rate of Taper		
Taper Ratio	<u>0.50</u>	<u>0.50</u>
Sweep-Back Angles, Degrees.		
Leading Edge		
Trailing Edge		
0.25 Element Line	<u>20.56</u>	<u>20.56</u>
Chords:		
Root (Theo) WP	<u>240.00</u>	<u>9.60</u>
Tip (Theo) WP	<u>120.00</u>	<u>4.80</u>
MAC	<u>186.675</u>	<u>7.467</u>
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
B.L. of .25 MAC		
Airfoil Section		
Leading Wedge Angle - Deg.		
Trailing Wedge Angle - Deg.		
Leading Edge Radius		
Void Area		
Blanketed Area		

## Notes:

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

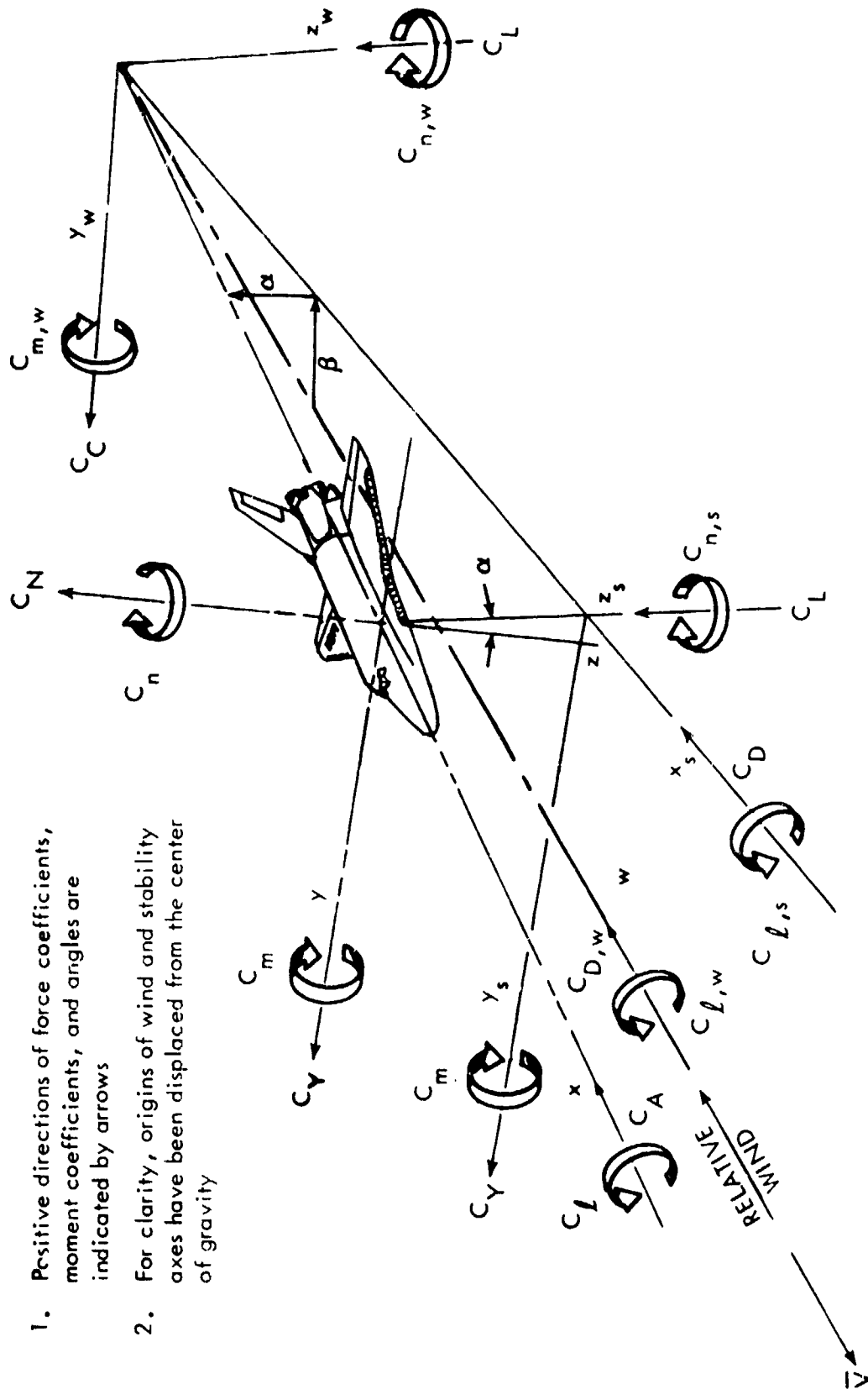
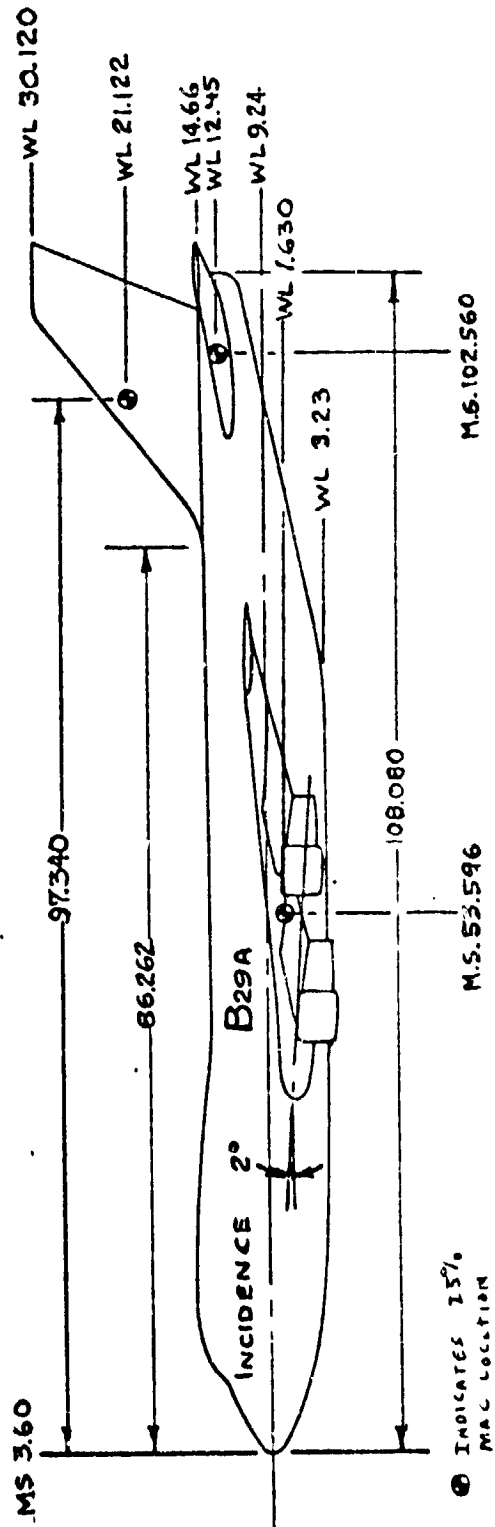
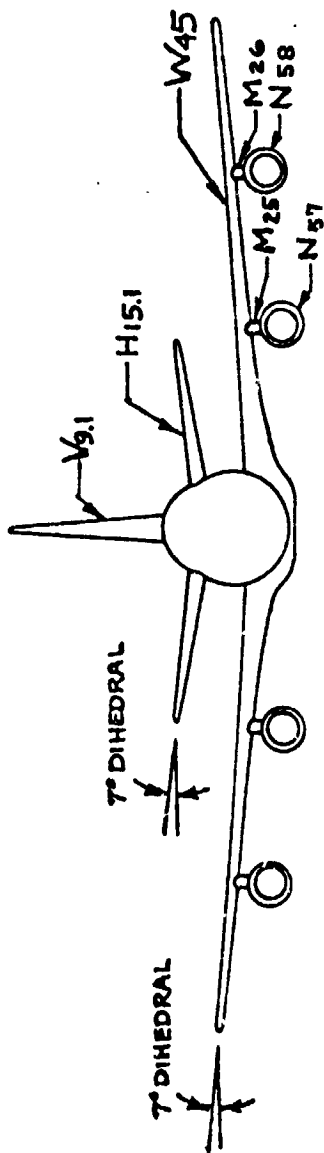


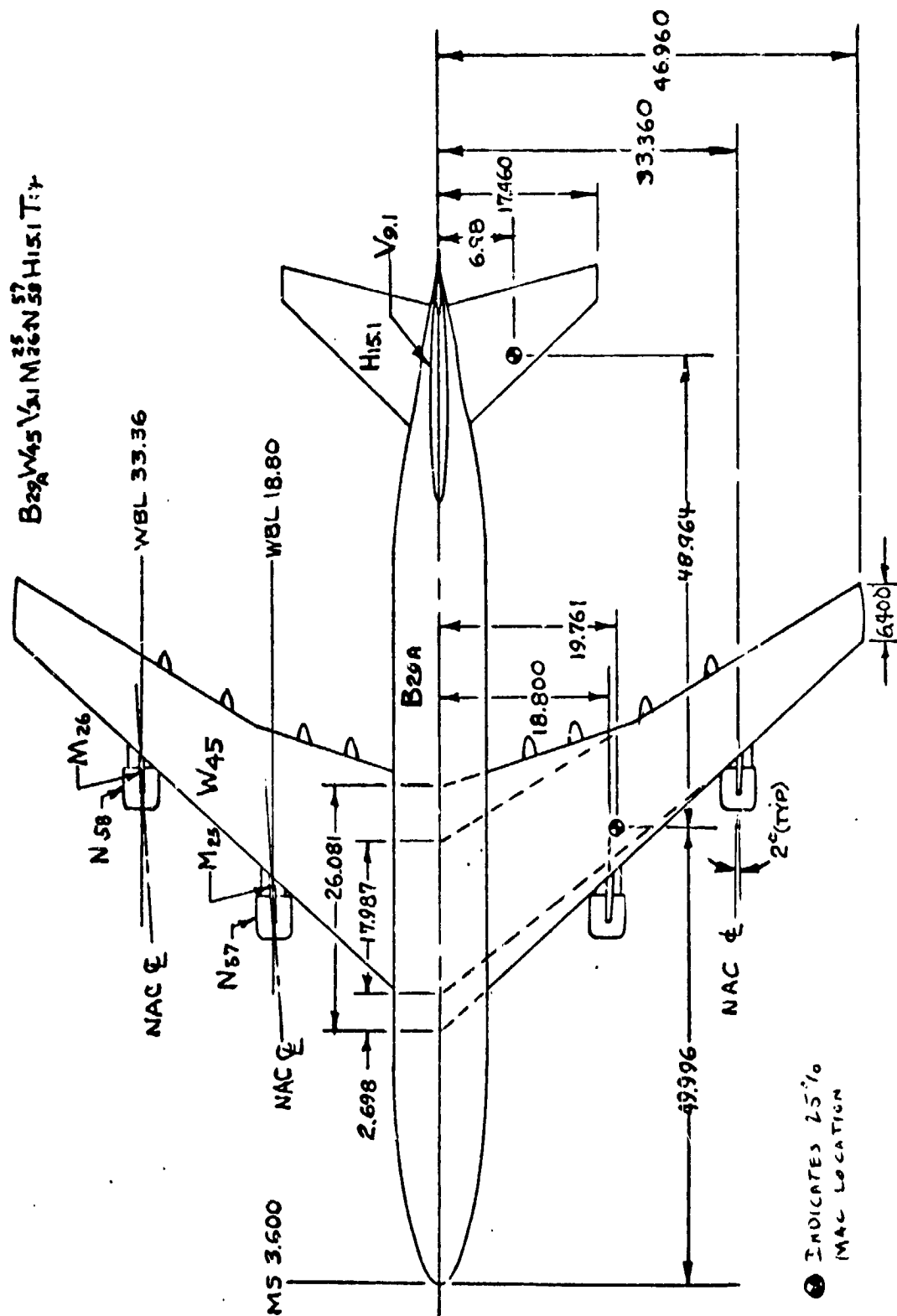
Figure 1. - Axis systems.

B29W45V91M25N38H151T14



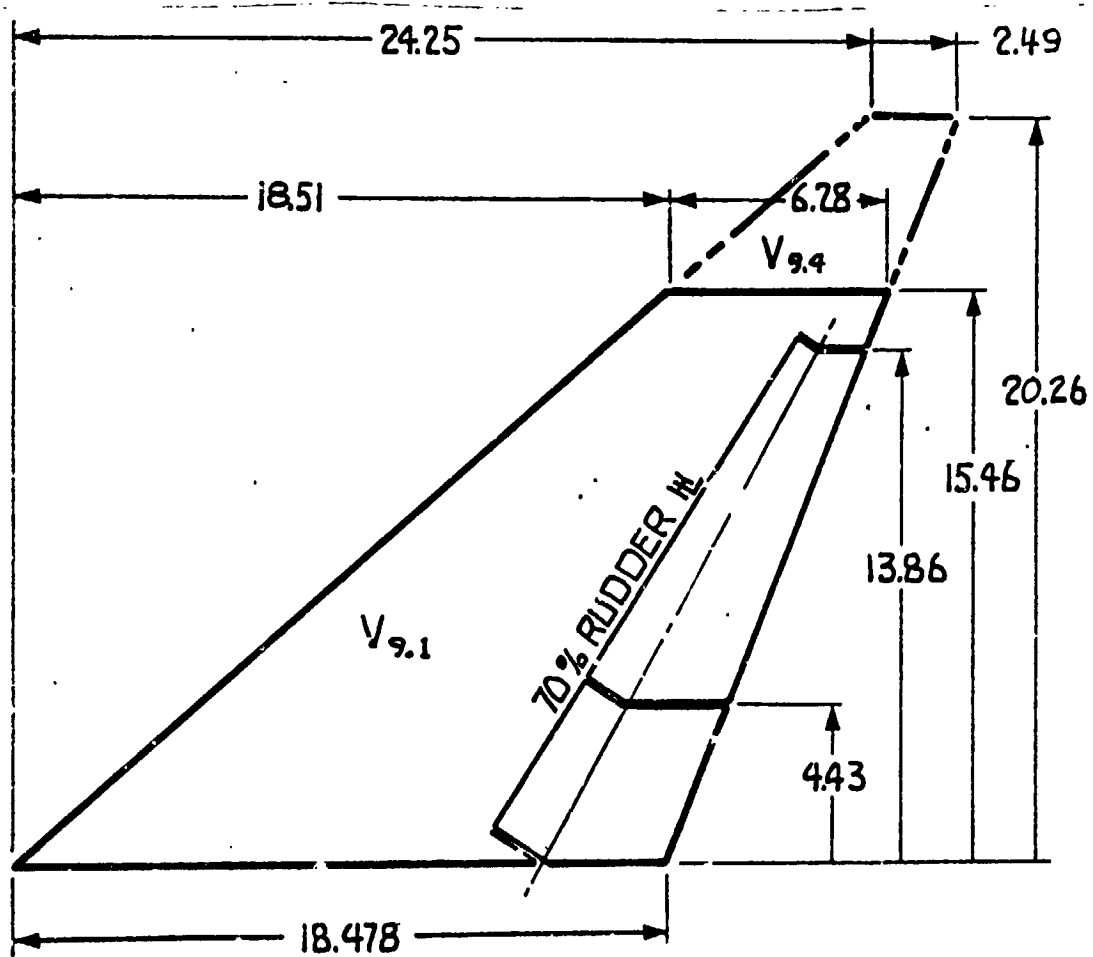
a. 747-100 Carrier Side and Front Views

Figure 2. - Model sketches.



b. 747-100 Carrier Top View

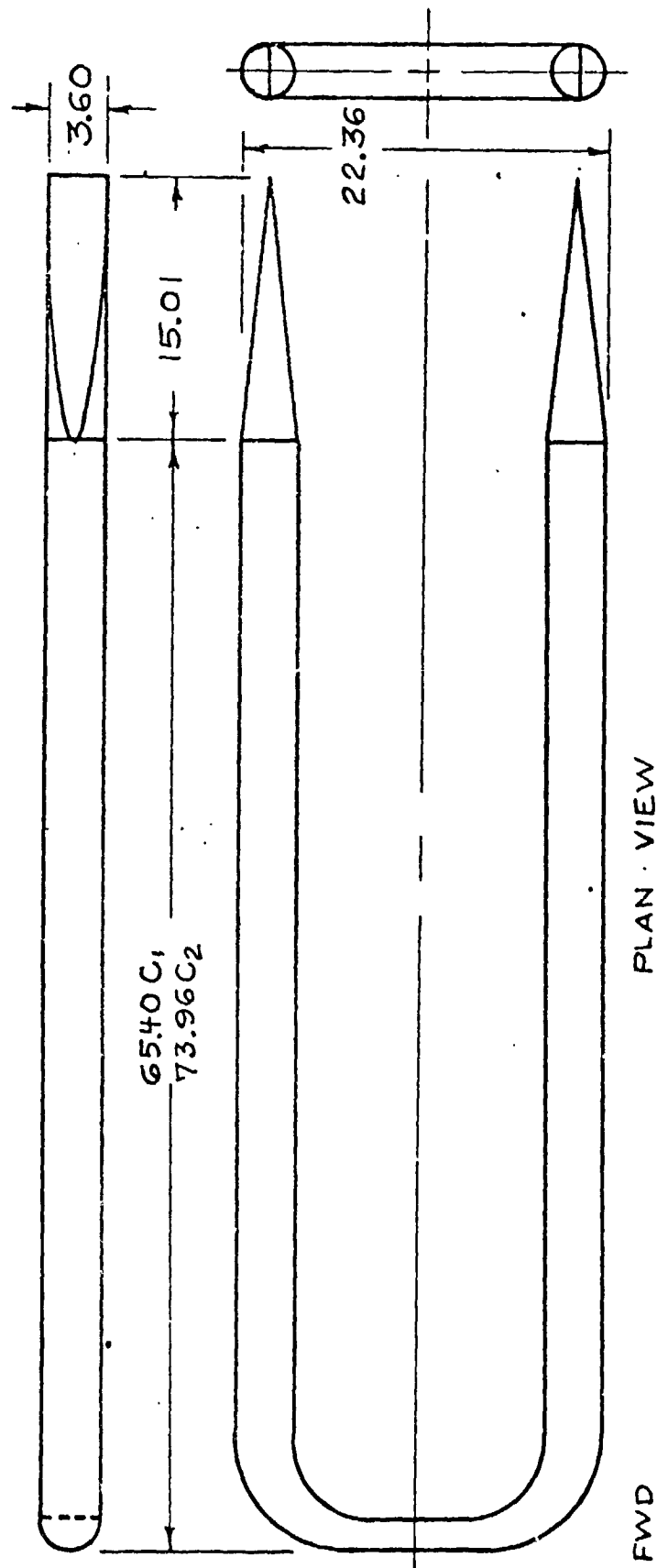
Figure 2. - Continued.



c.  $V_{9.1}$ ,  $V_{9.4}$  Vertical Tails

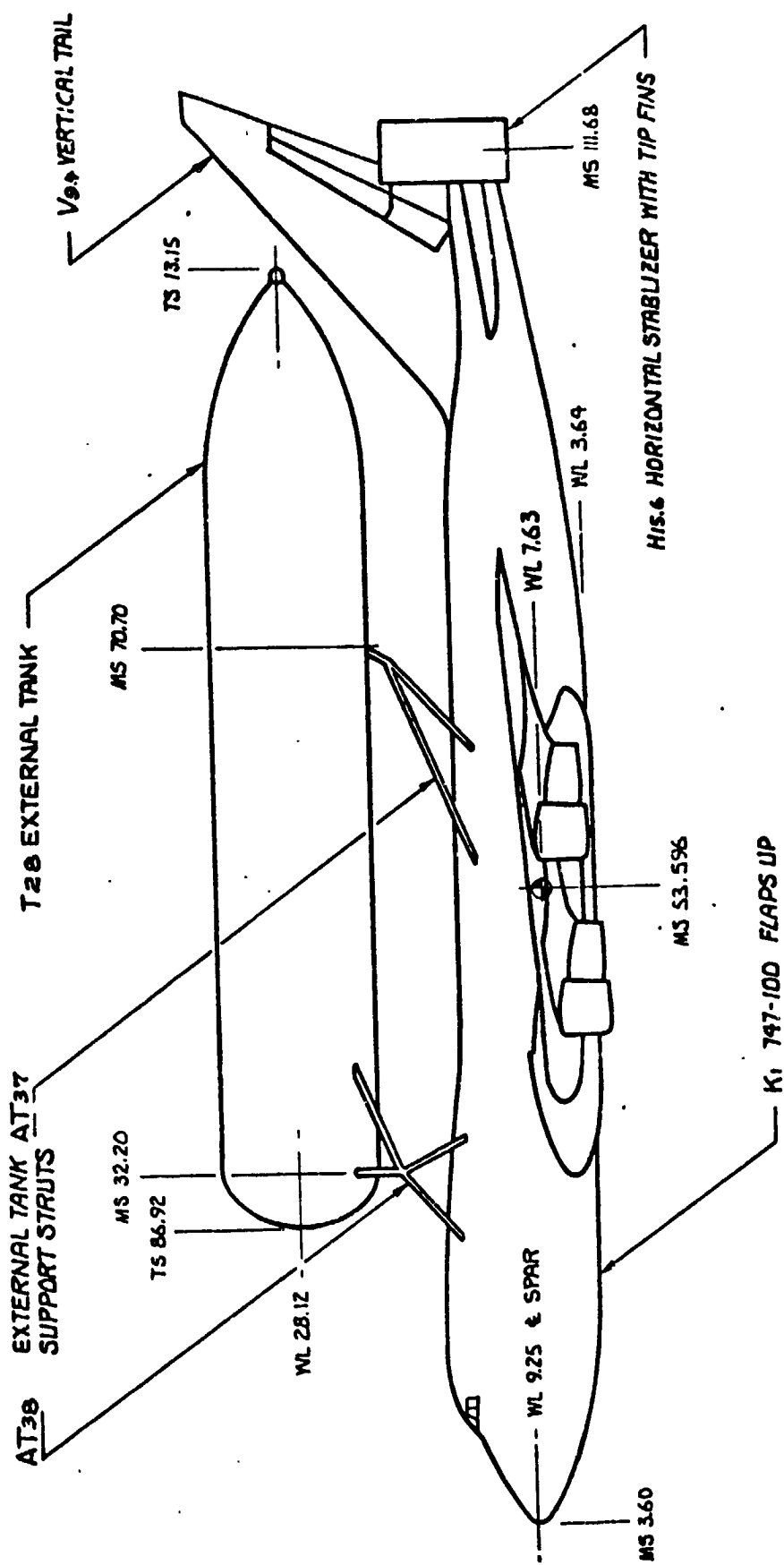
Figure 2. - Continued.





e. C<sub>1</sub> and C<sub>2</sub> External Tank Universal Support Assembly

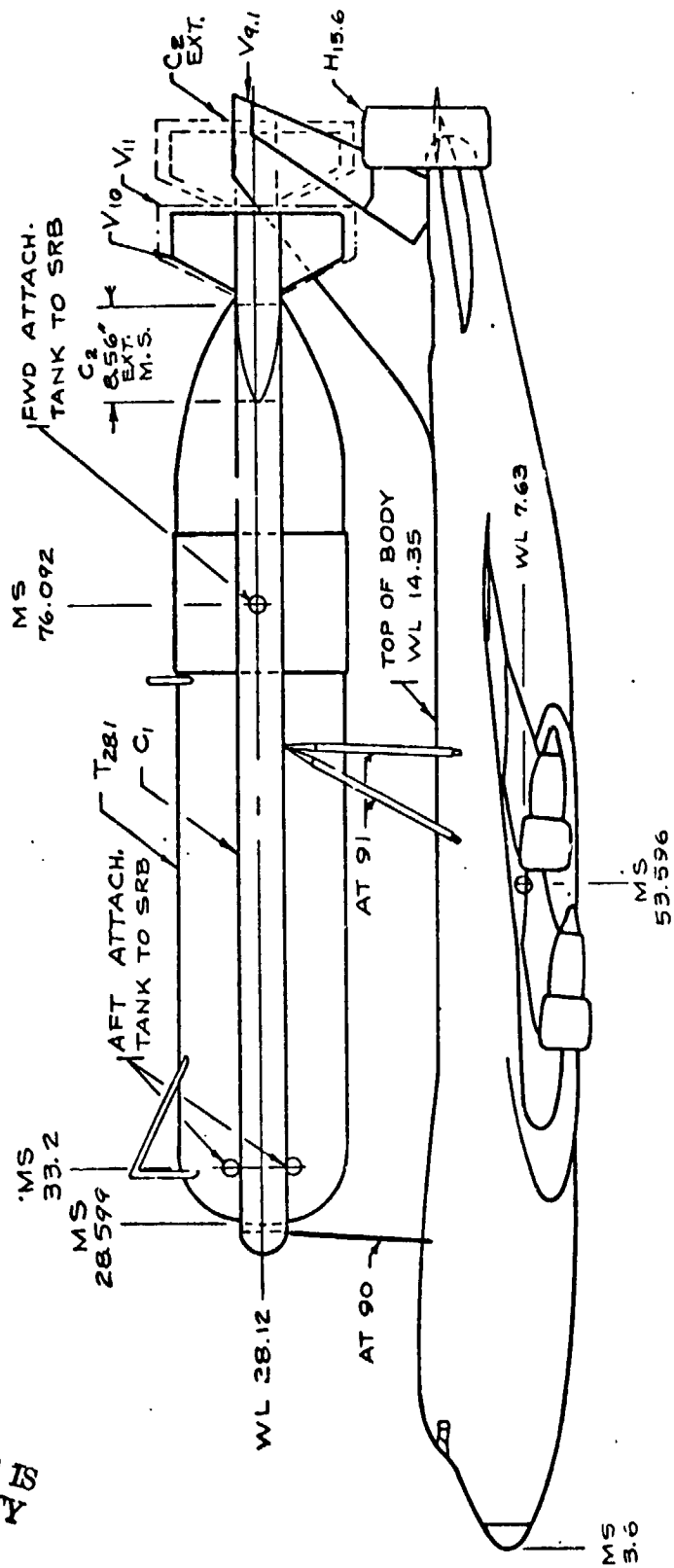
Figure 2. - Continued.



f. 747-100 and External Tank

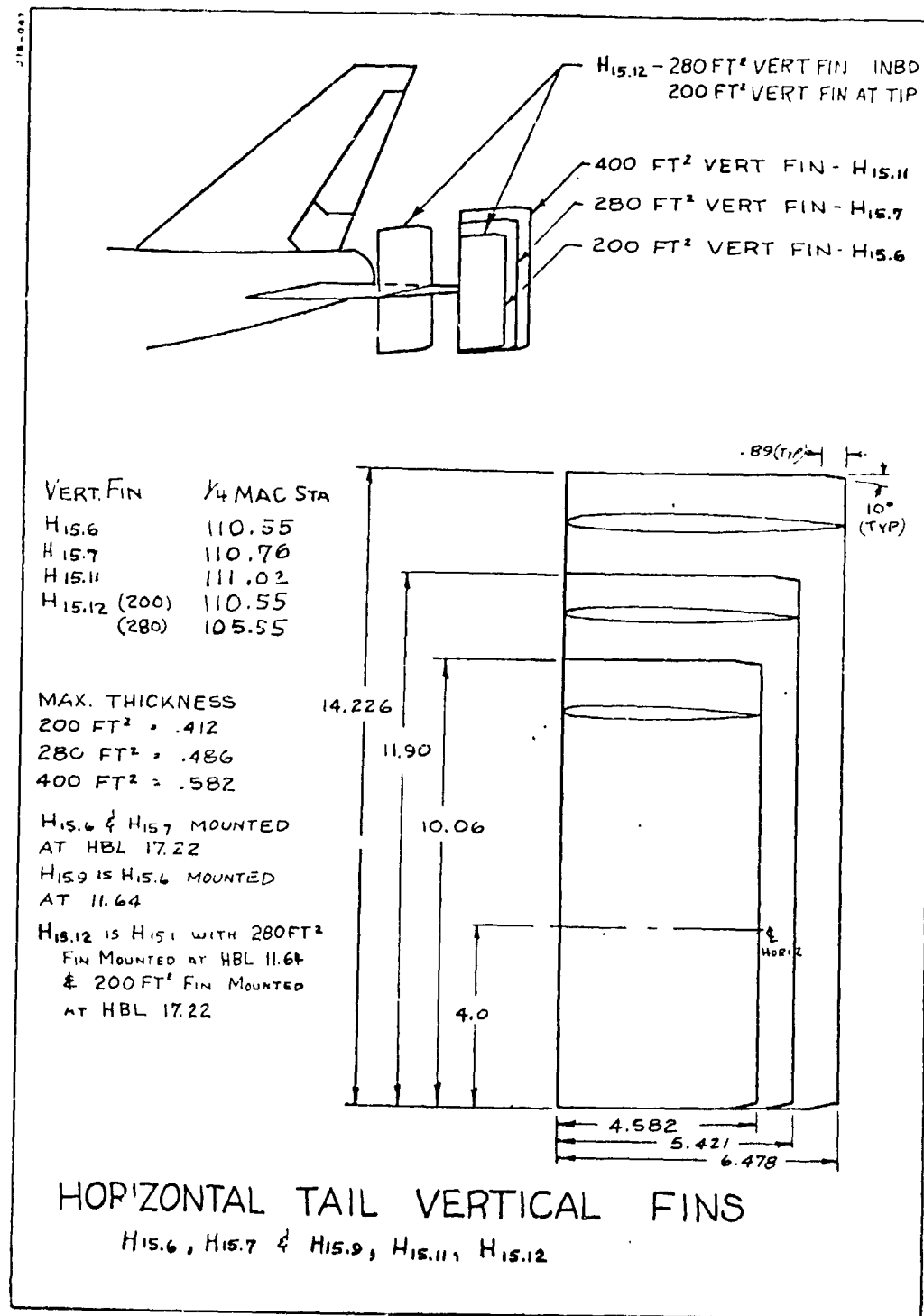
Figure 2. - Continued.

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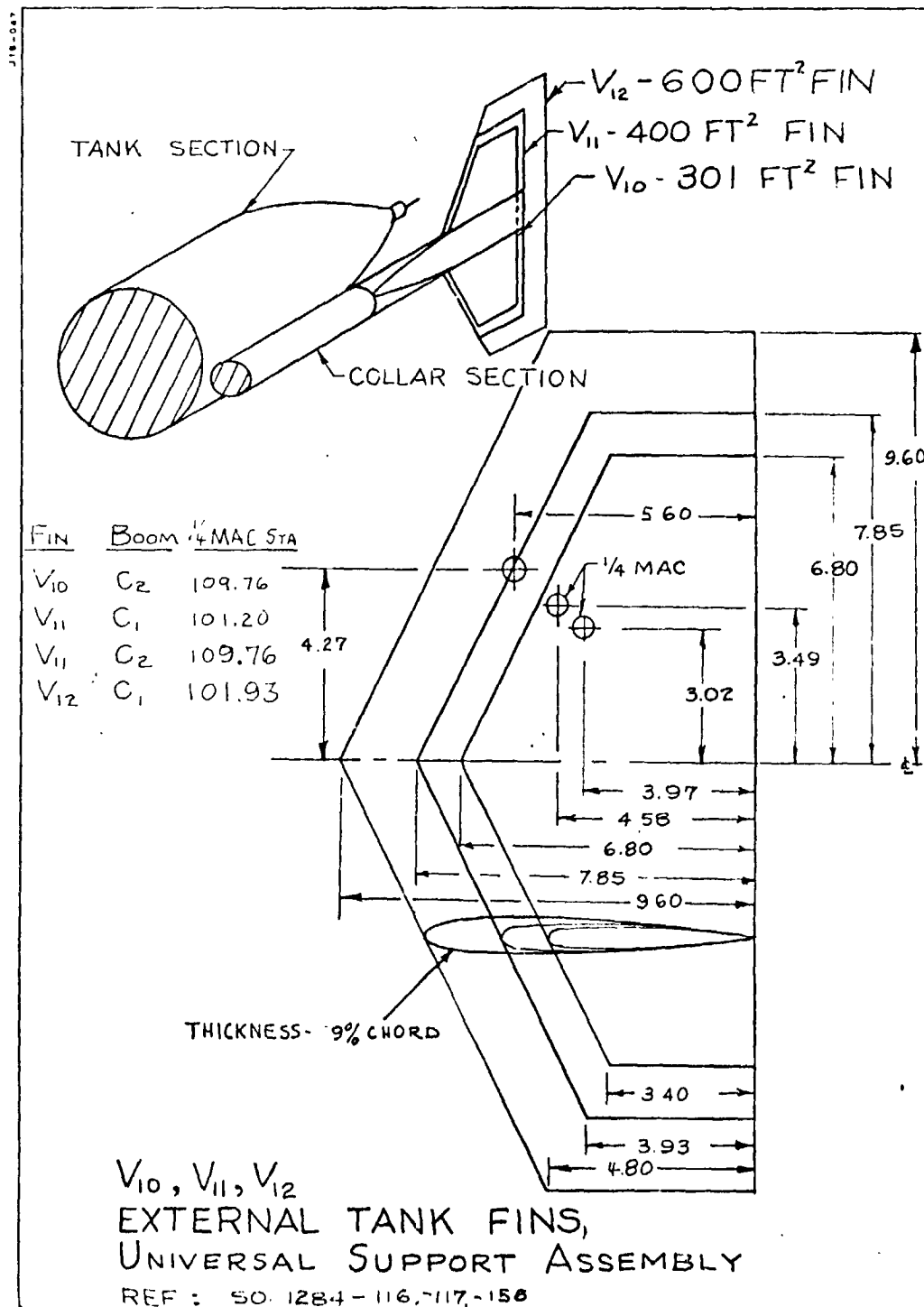
g. 747-100, Universal Support Assembly and External Tank

Figure 2. - Continued.



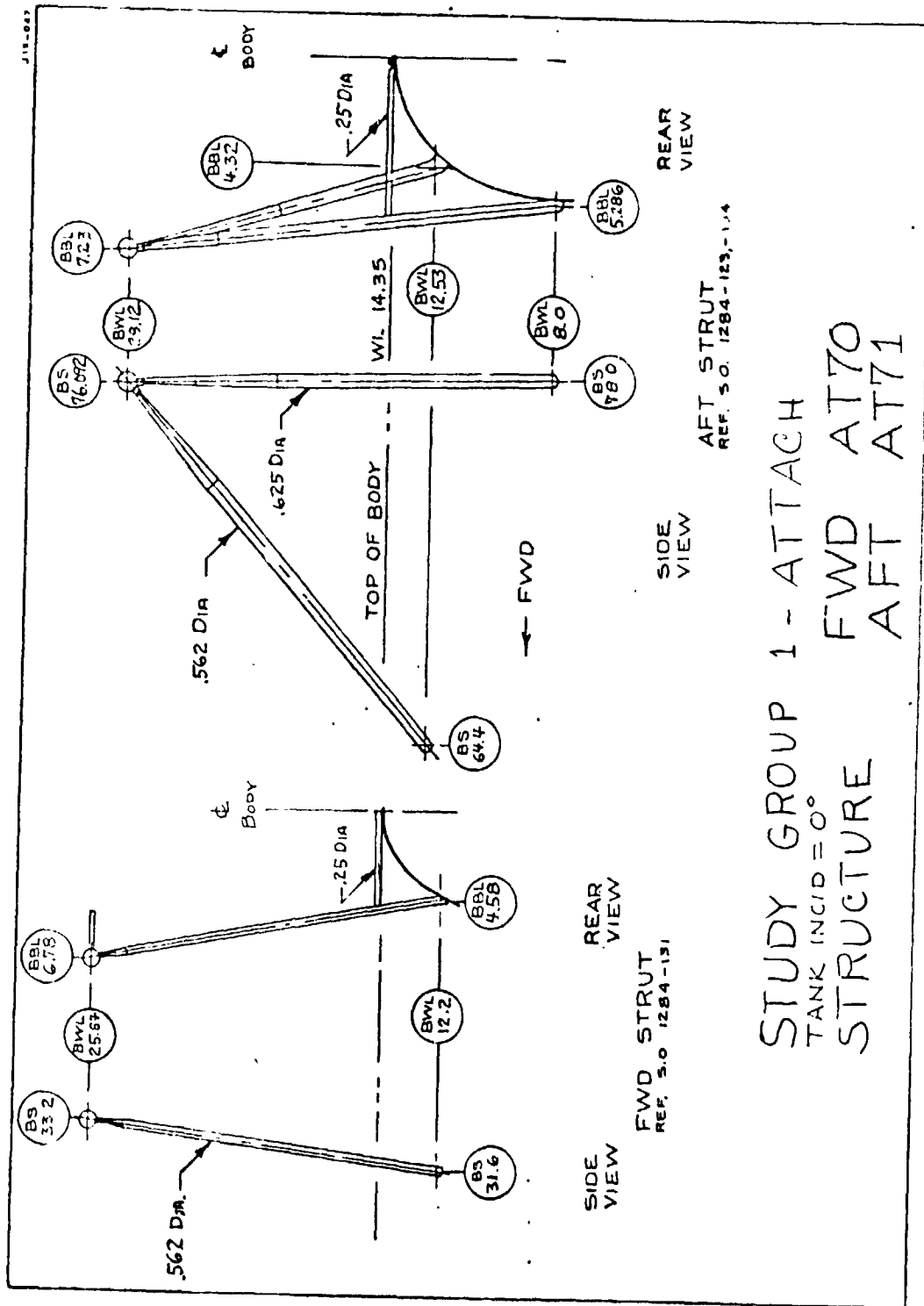
h. Horizontal Tail Vertical Fins

Figure 2. - Continued.



i.  $V_{10}, V_{11}, V_{12}$  External Tank Fins-Universal Support Assembly

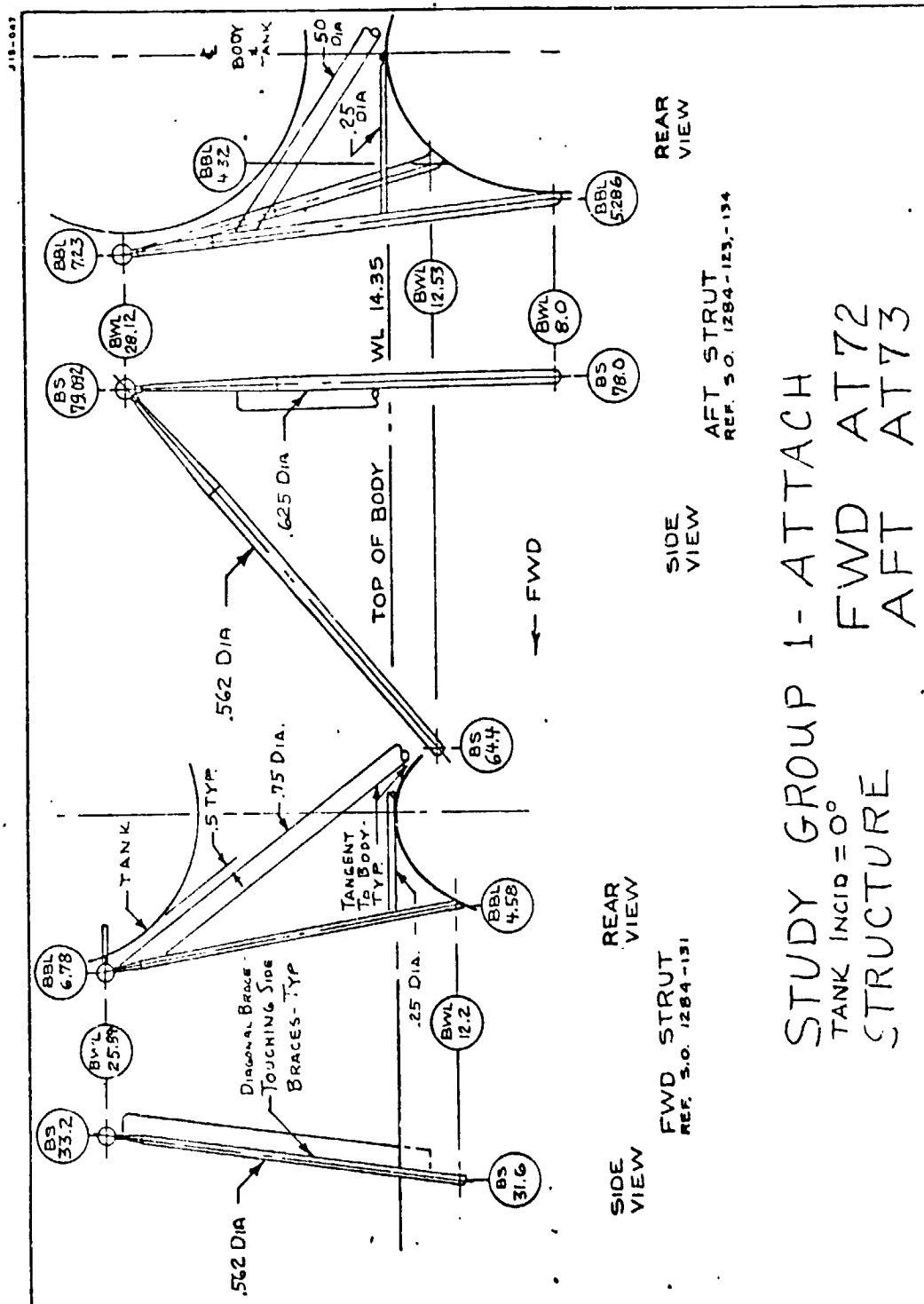
Figure 2. - Continued.



J. Study Group 1-Attach Structure FWD/AFT AT76/AT71

Figure 2. - Continued.

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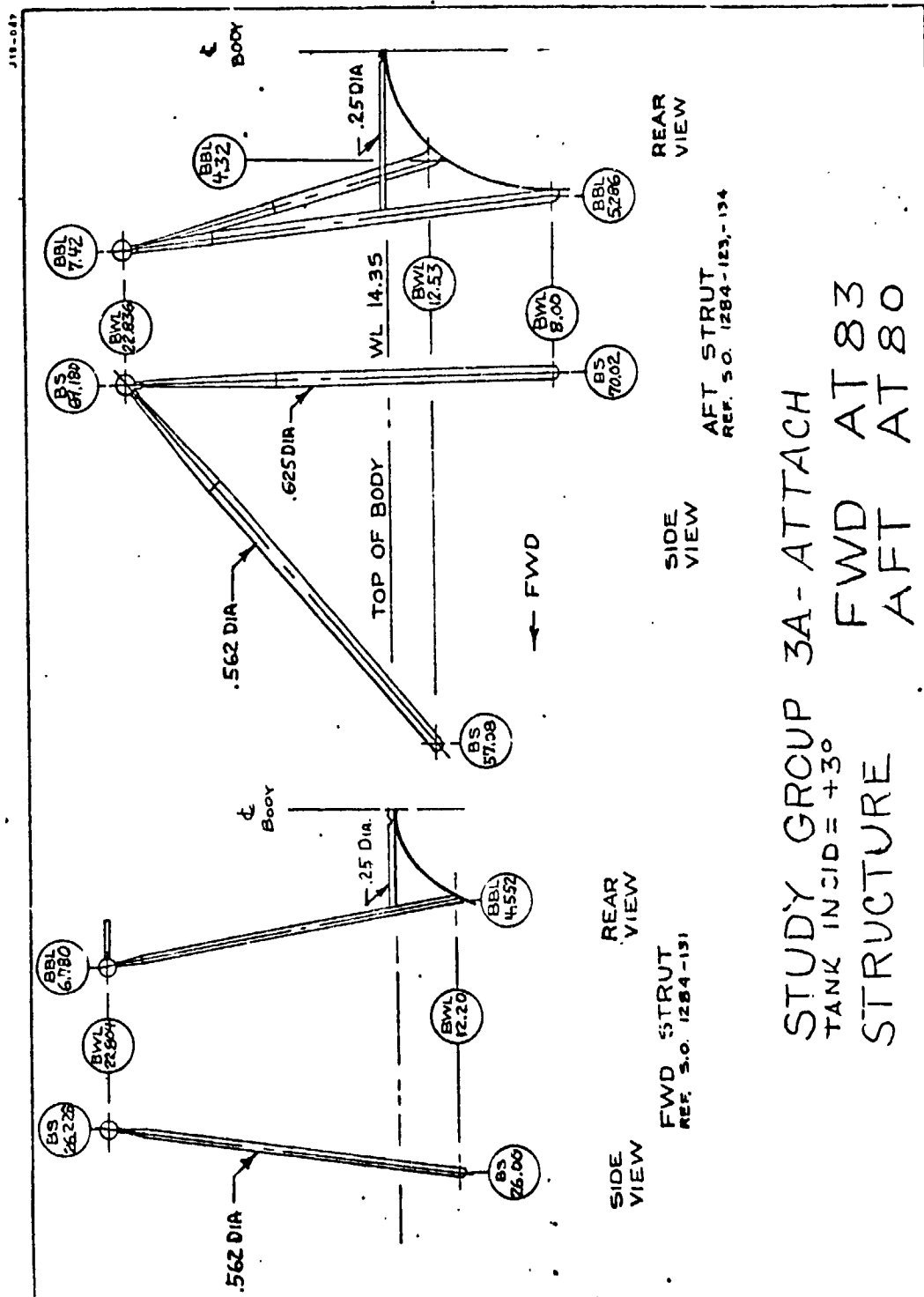


k. Study Group 1-Attach Structure FWD/AFT AT72/AT73

Figure 2. - Continued.

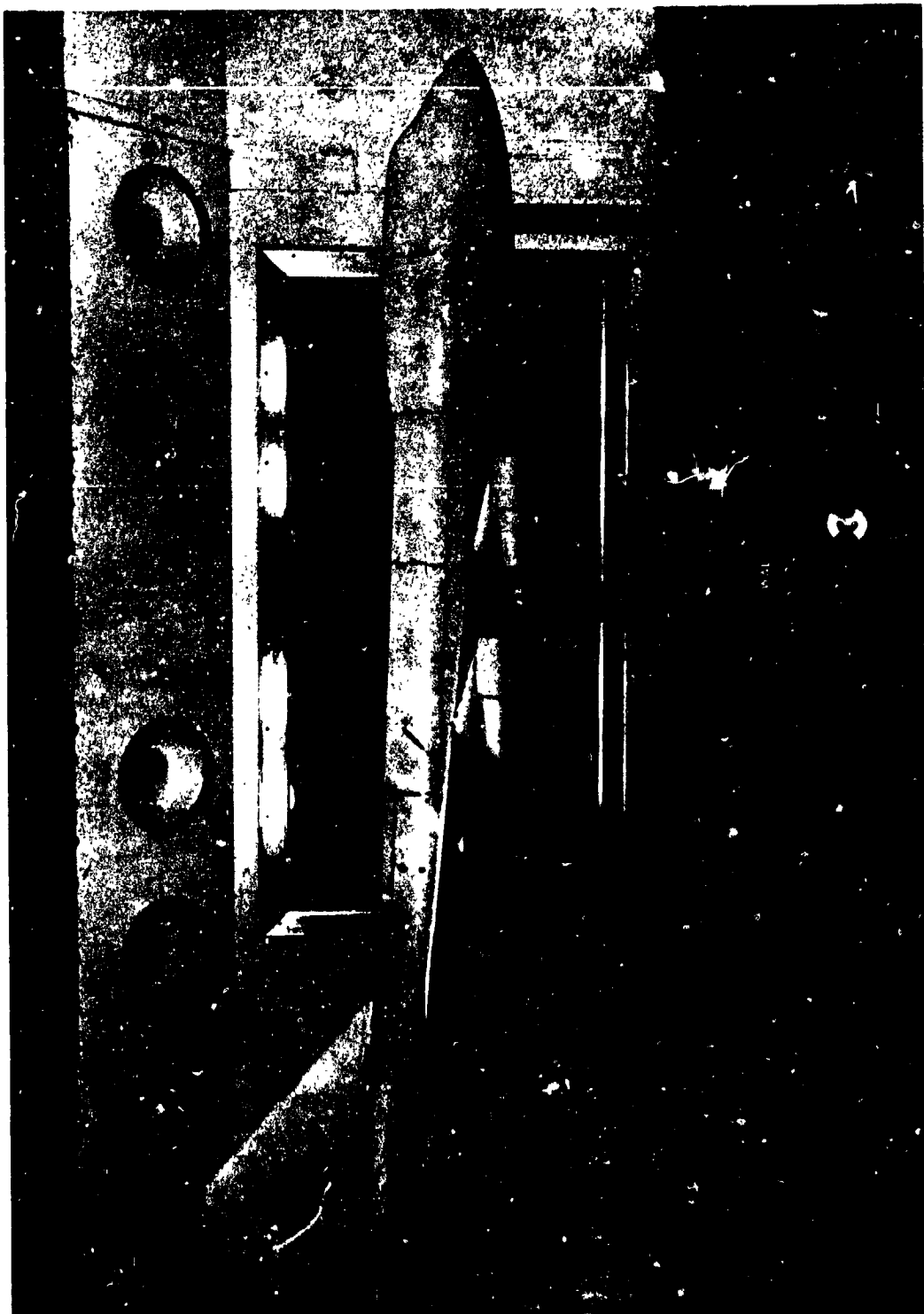






n. Study Group 3A-Attach Structure FWD/AFT AT83/AT80

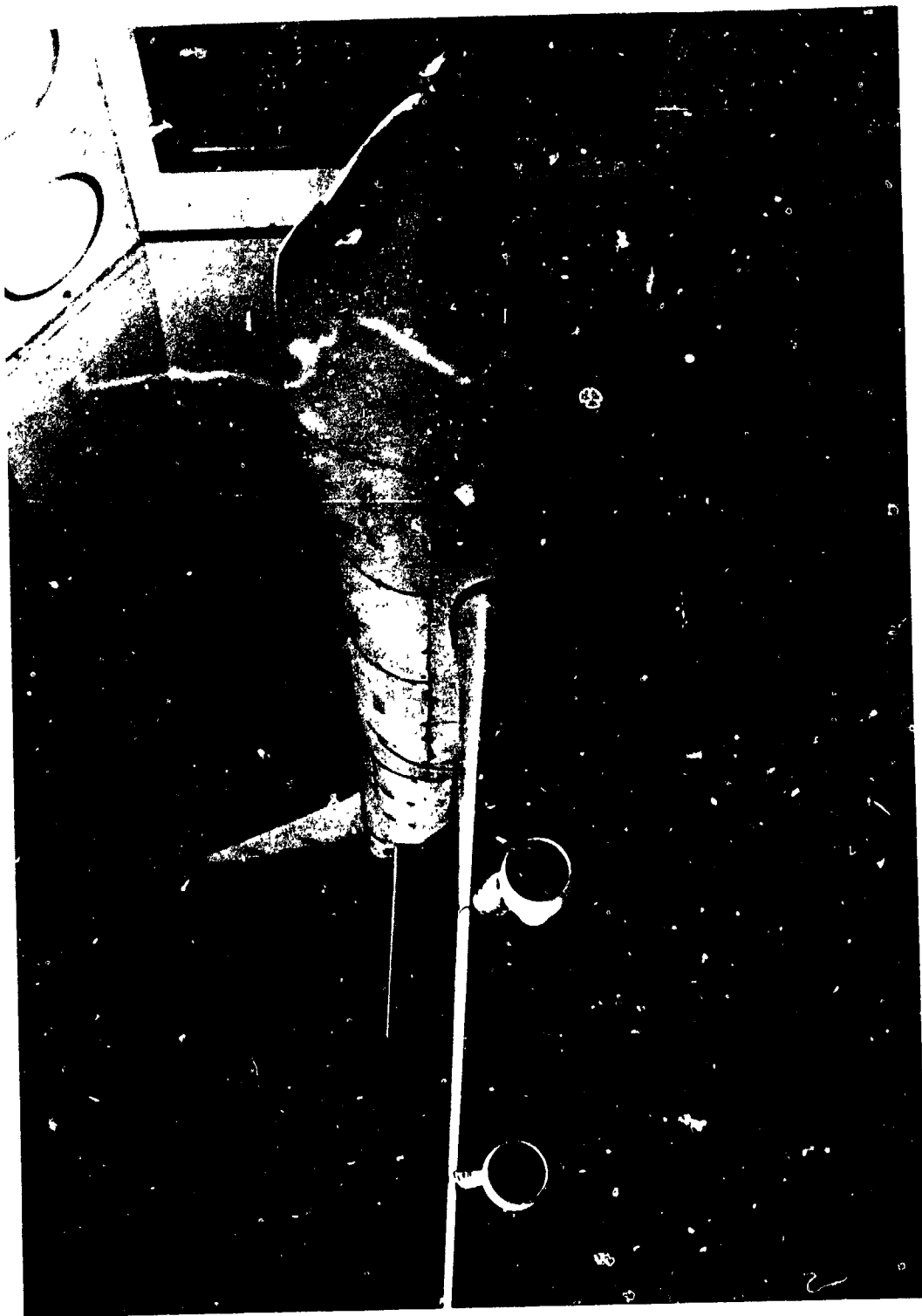
Figure 3. - Concluded.



a. 747-100 Model Installation-Side View

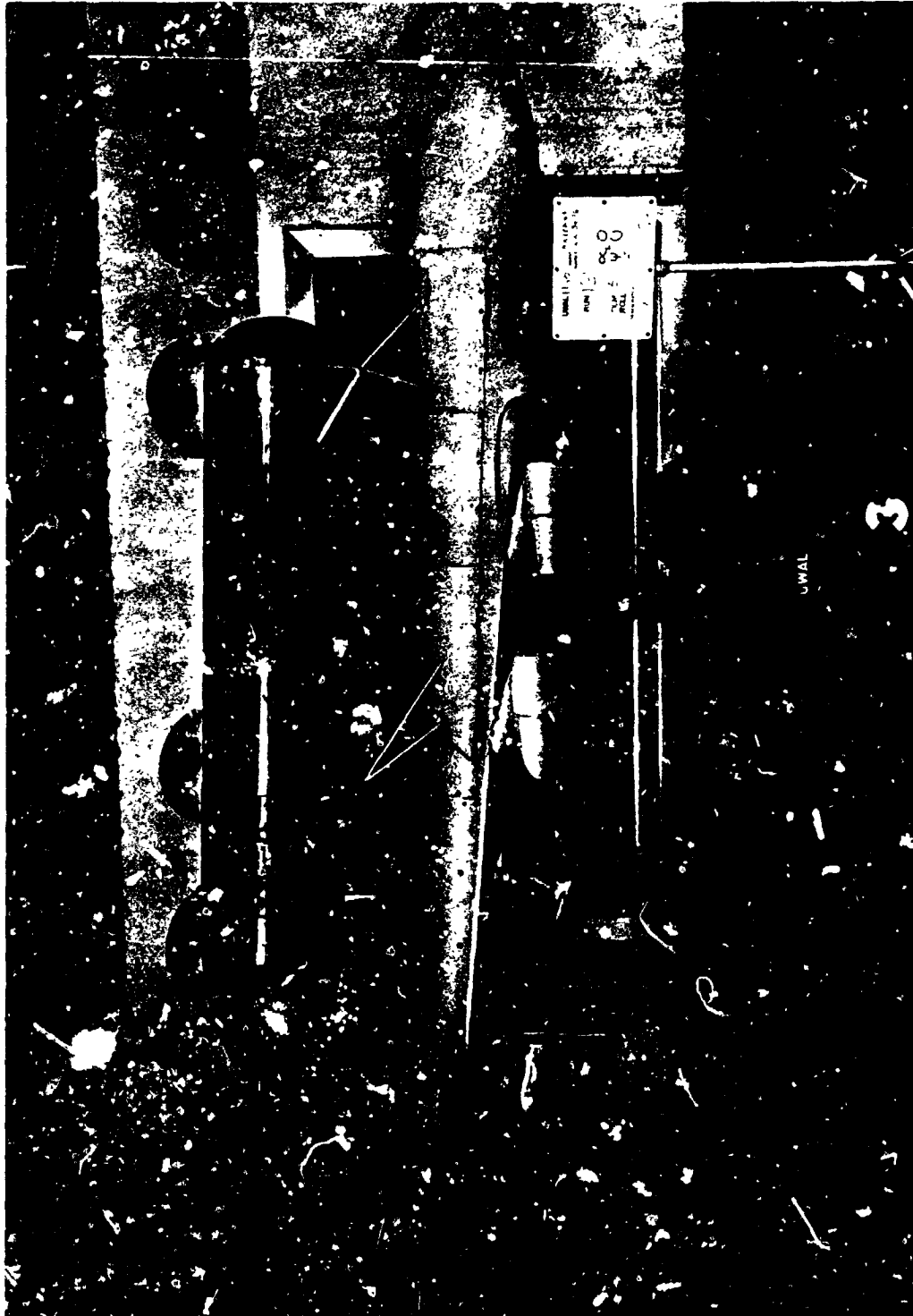
Figure 3. - Model photographs.

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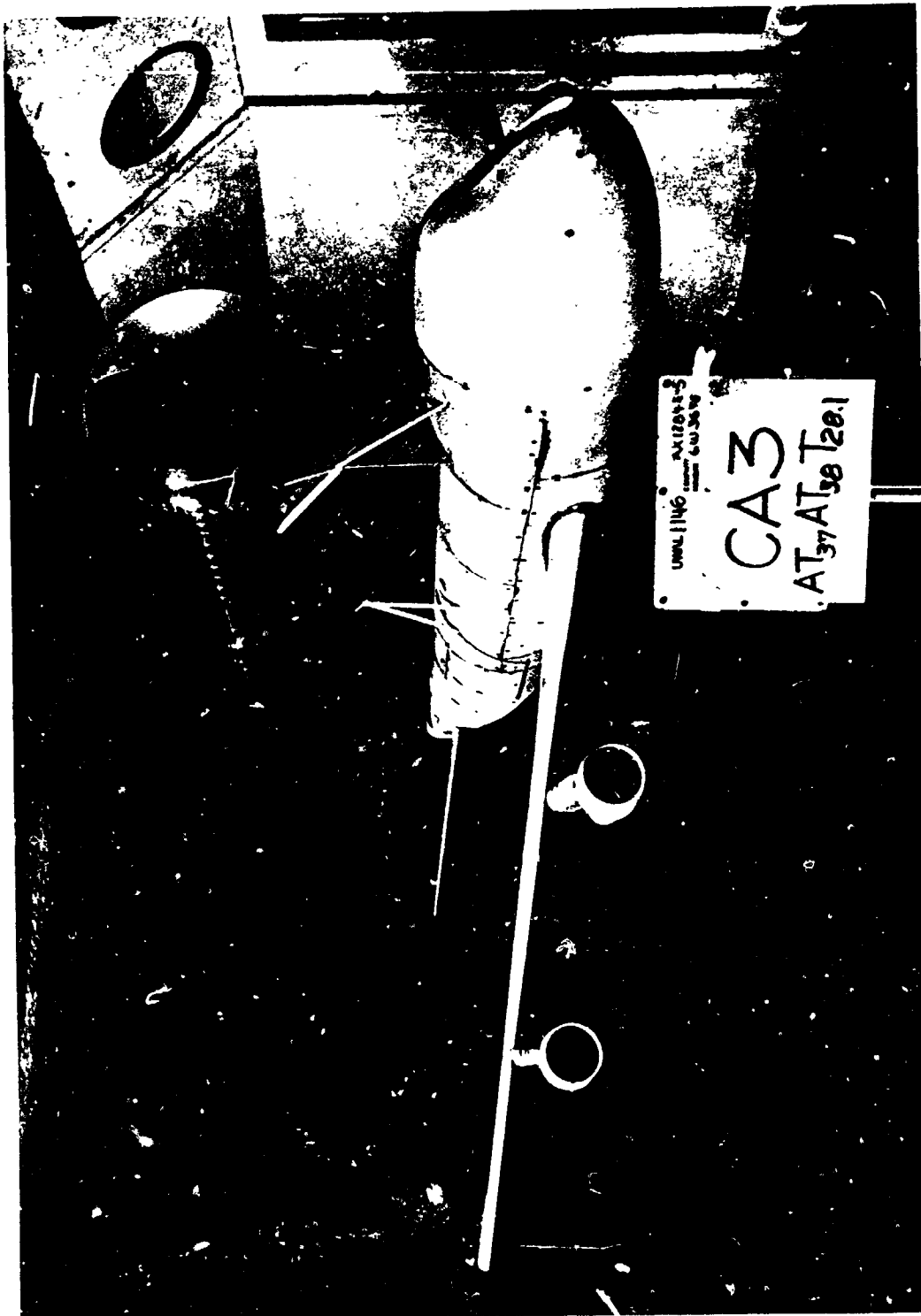
b. 747-100 Model Installation-Three-Quarter Front View

Figure 3. - Continued.



U. 747-100/External Tank, Study Group CA3-Side View

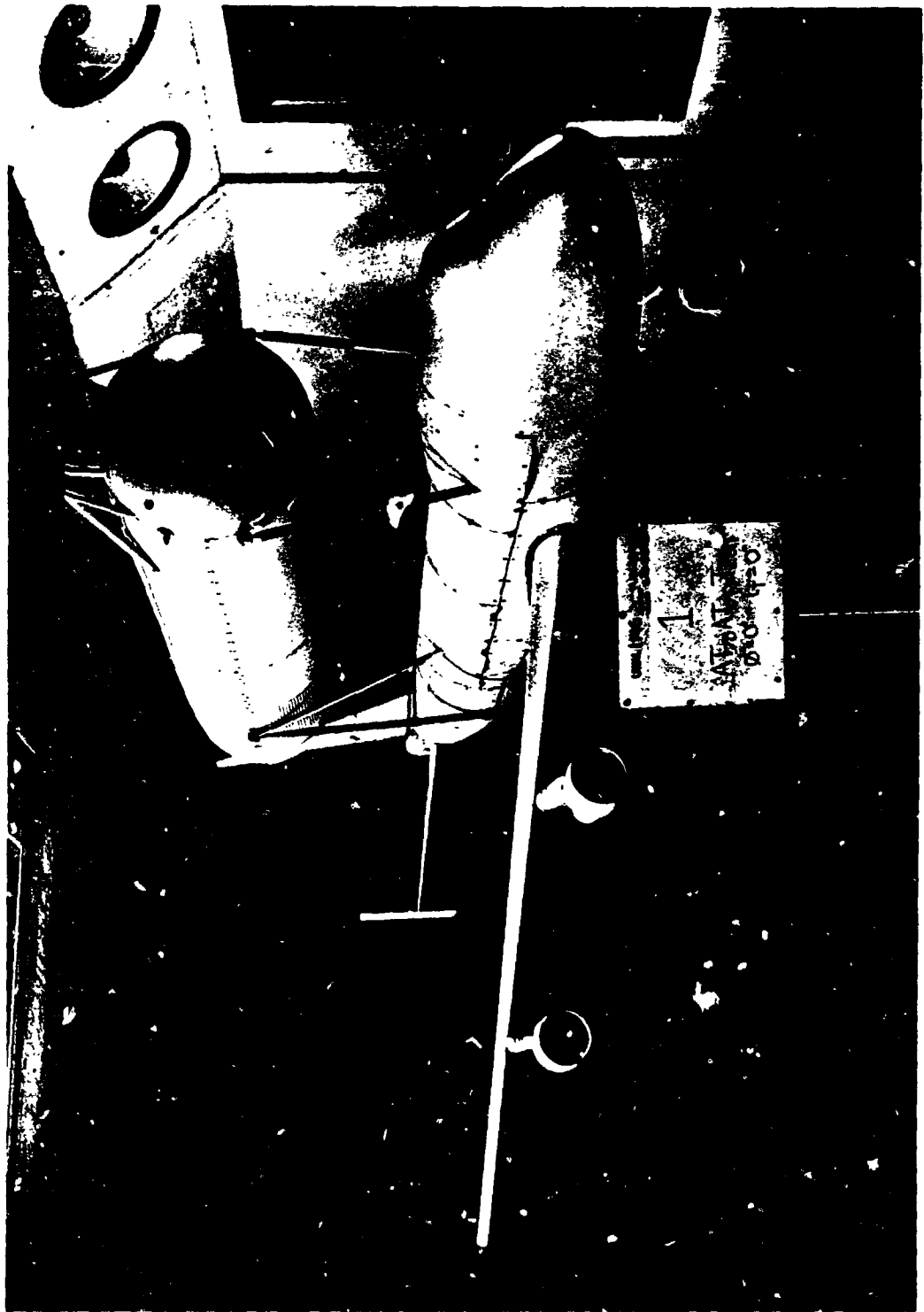
Figure 3. - Continued.



d. 747-100/External Tank, Study Group CA3-Three-Quarter Front View

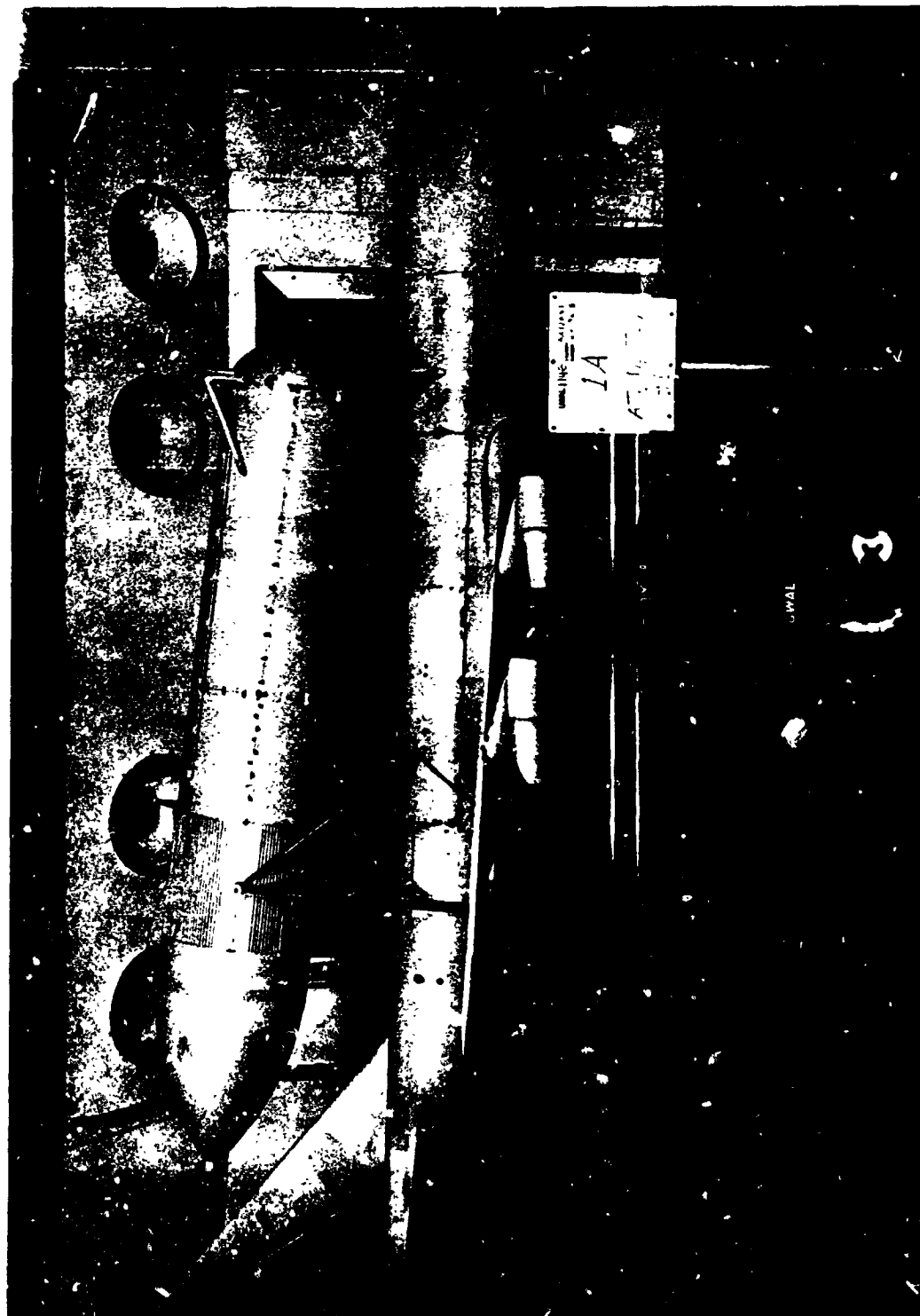
Figure 3. - Continued.

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e. 747-100/External Tank, Study Group 1-Three-Quarter Front View

Figure 3. - Continued.



f. 747-100/External Tank, Study Group 1A-Side View

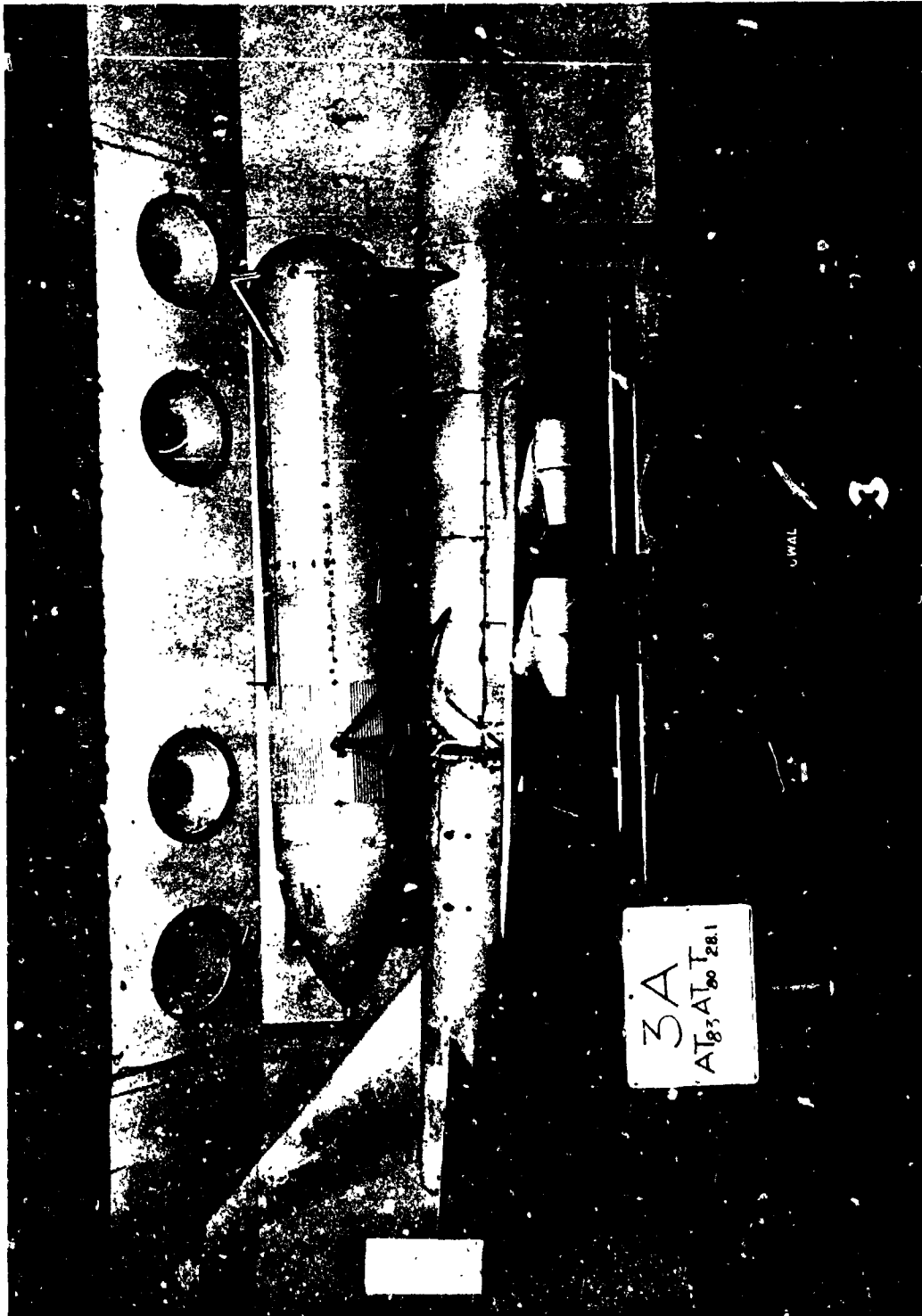
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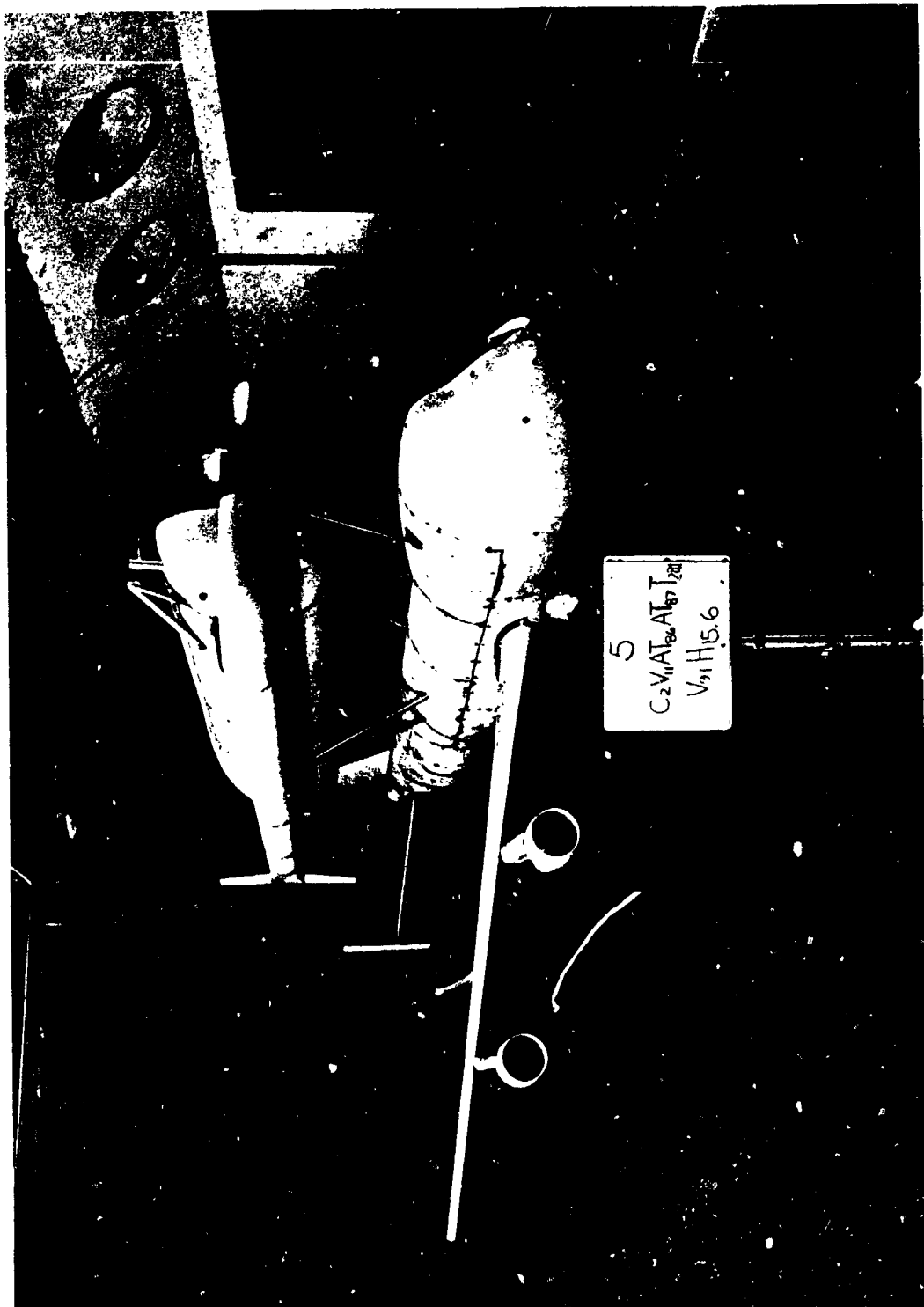
g. 747-100/External Tank, Study Group 3A-Three-Quarter Front View

Figure 3. - Continued.



h. 747-100/External Tank, Study Group 3A-Side View

Figure 3. - Continued.



i. 747-100/External Tank/Universal Attach Structure-Study Group 5-Three-Quarter Front view

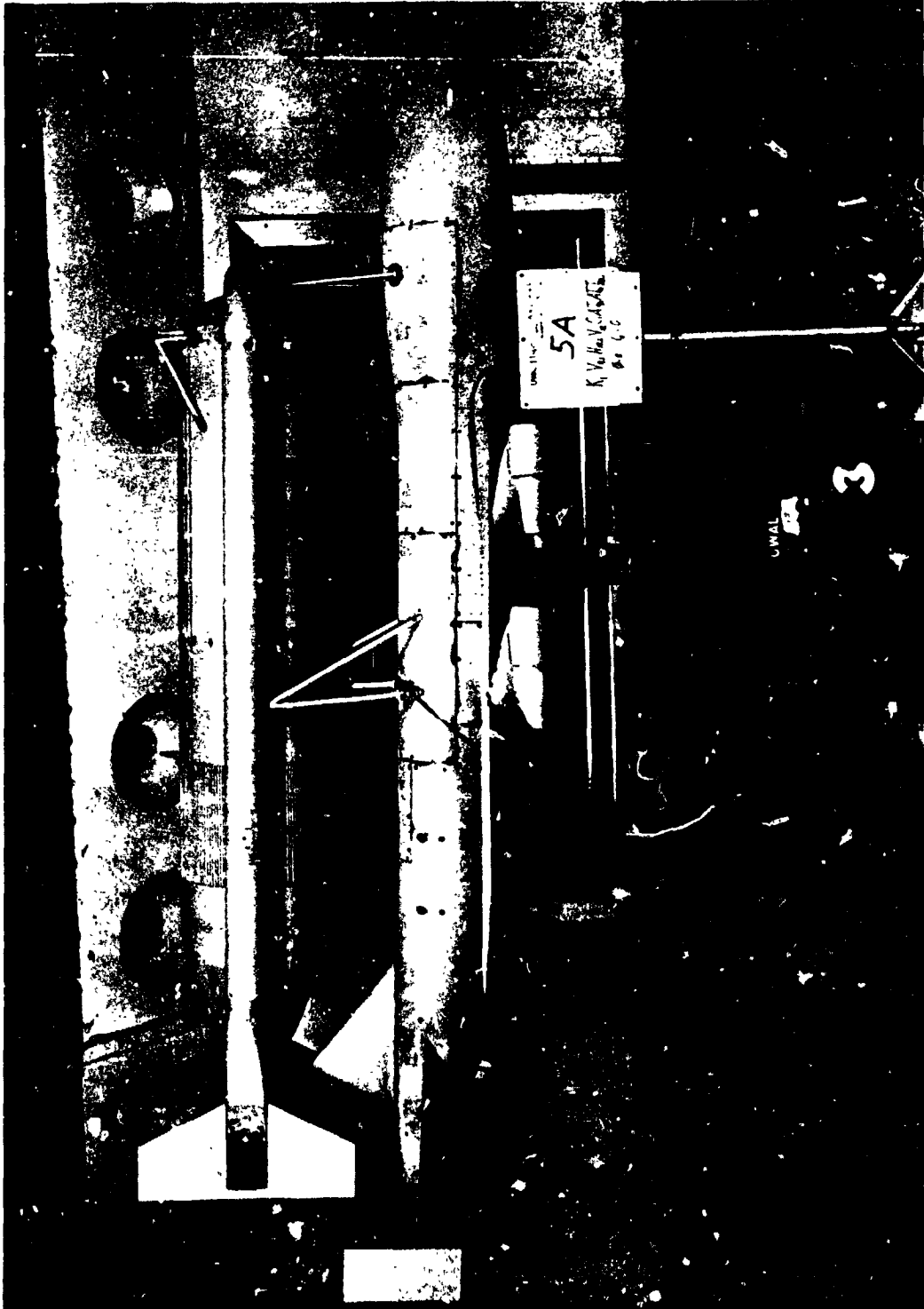
Figure 3. - Continued.

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J. 747-100/External Tank/Universal Attach Structure-Study Group 5-Side View

Figure 3. - Continued.



k. 747-100/External Tank/Universal Attack Structure-Study Group 5A-Side View

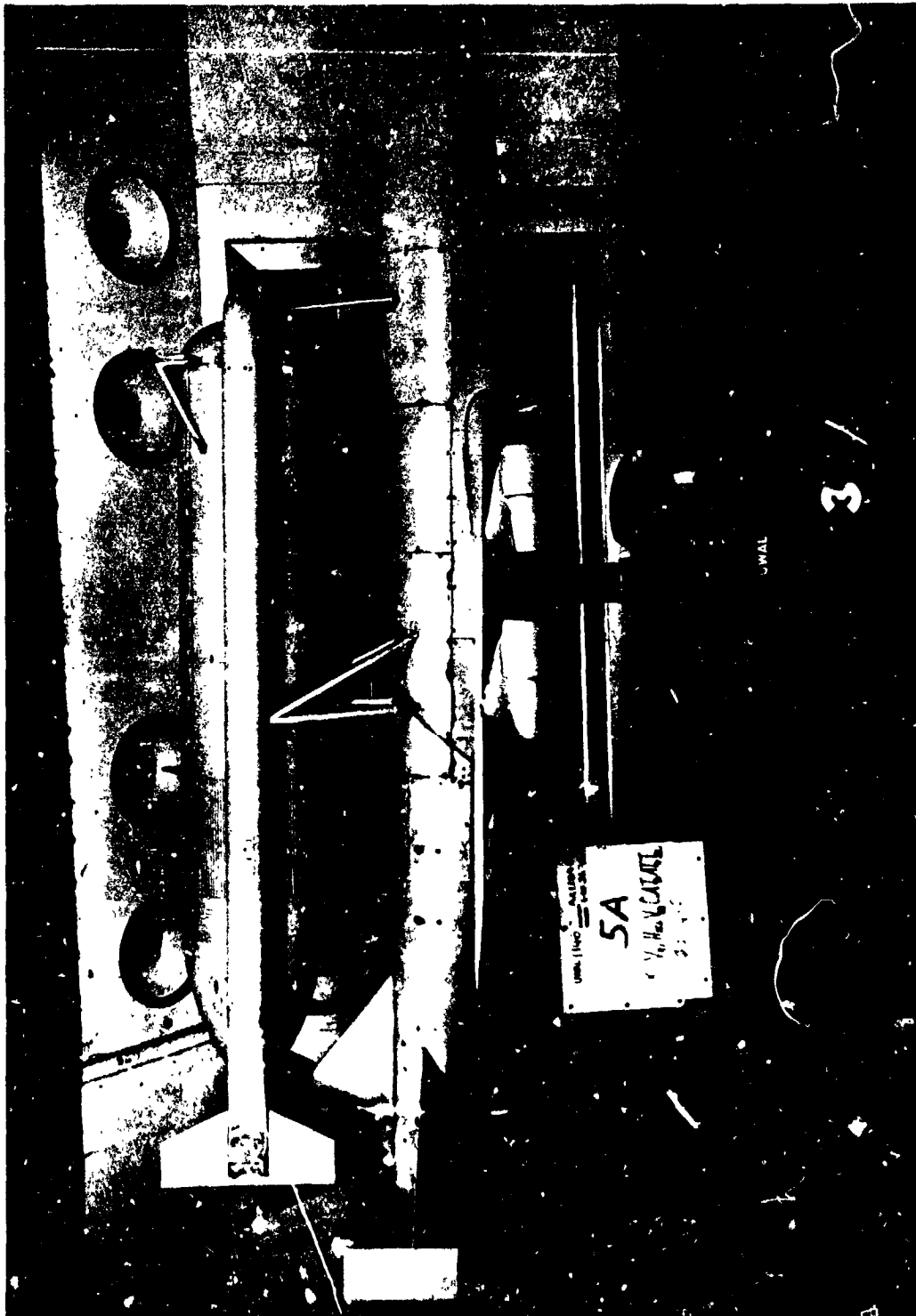
Figure 3. - Continued.



1. 747-100/External Tank/Universal Attach Structure-Study Group 5A-Three-Quarter Front View

Figure 3. - Continued.

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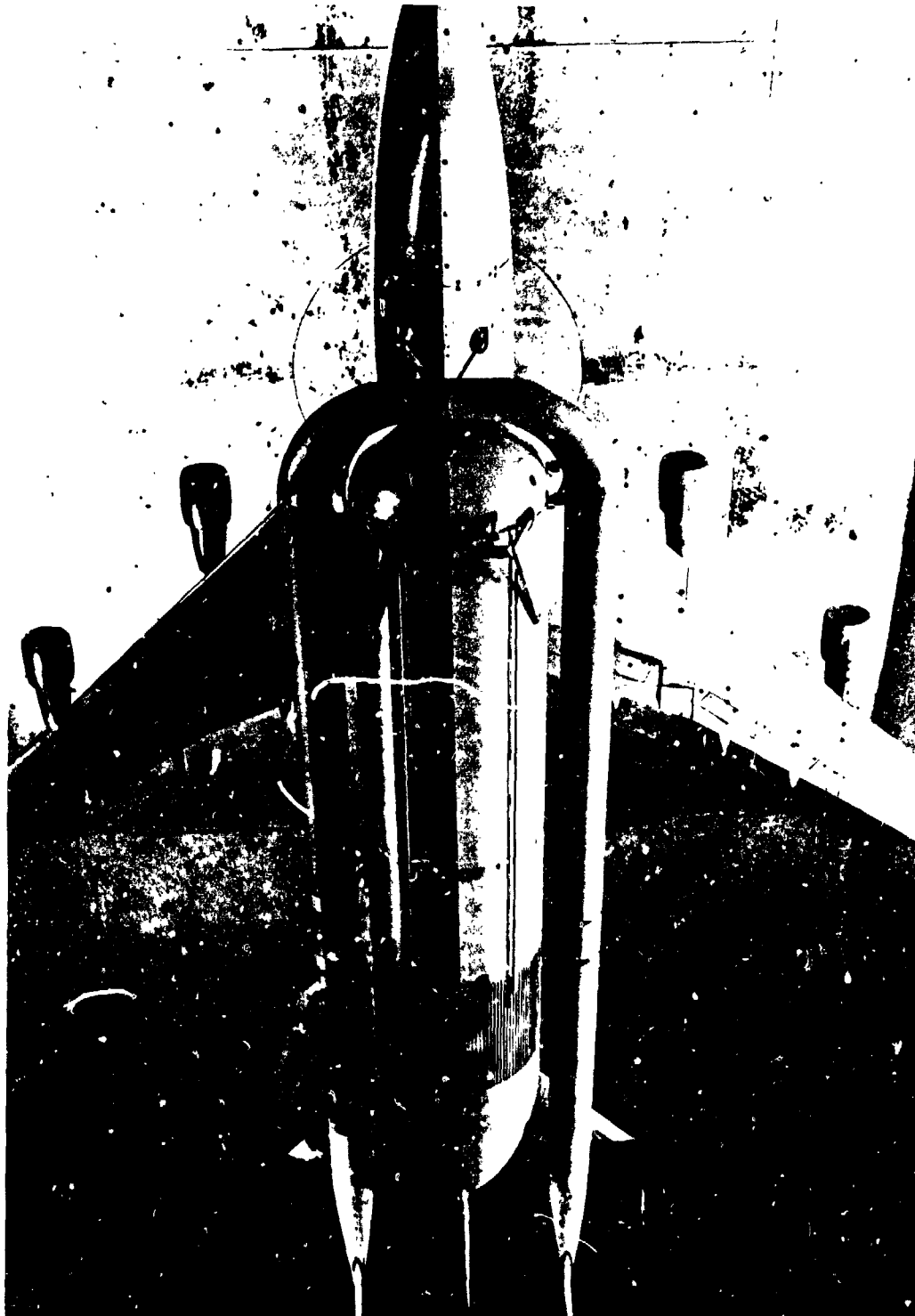
m. 747-i00/External Tank/Universal Attach Structure w/Alternate Fins-Study Group 5A-Side View

Figure 3. - Continued.



n. 747-100/External Tank/Universal Attach Structure w/Alternate Pins-Study Group 5A-Three-Quarter Front View

Figure 3. - Continued.



o. 747-100/External Tank/Universal Attach Structure-Study Group 5A-Top View

Figure 3. - Concluded.

DATA FIGURES

C.2

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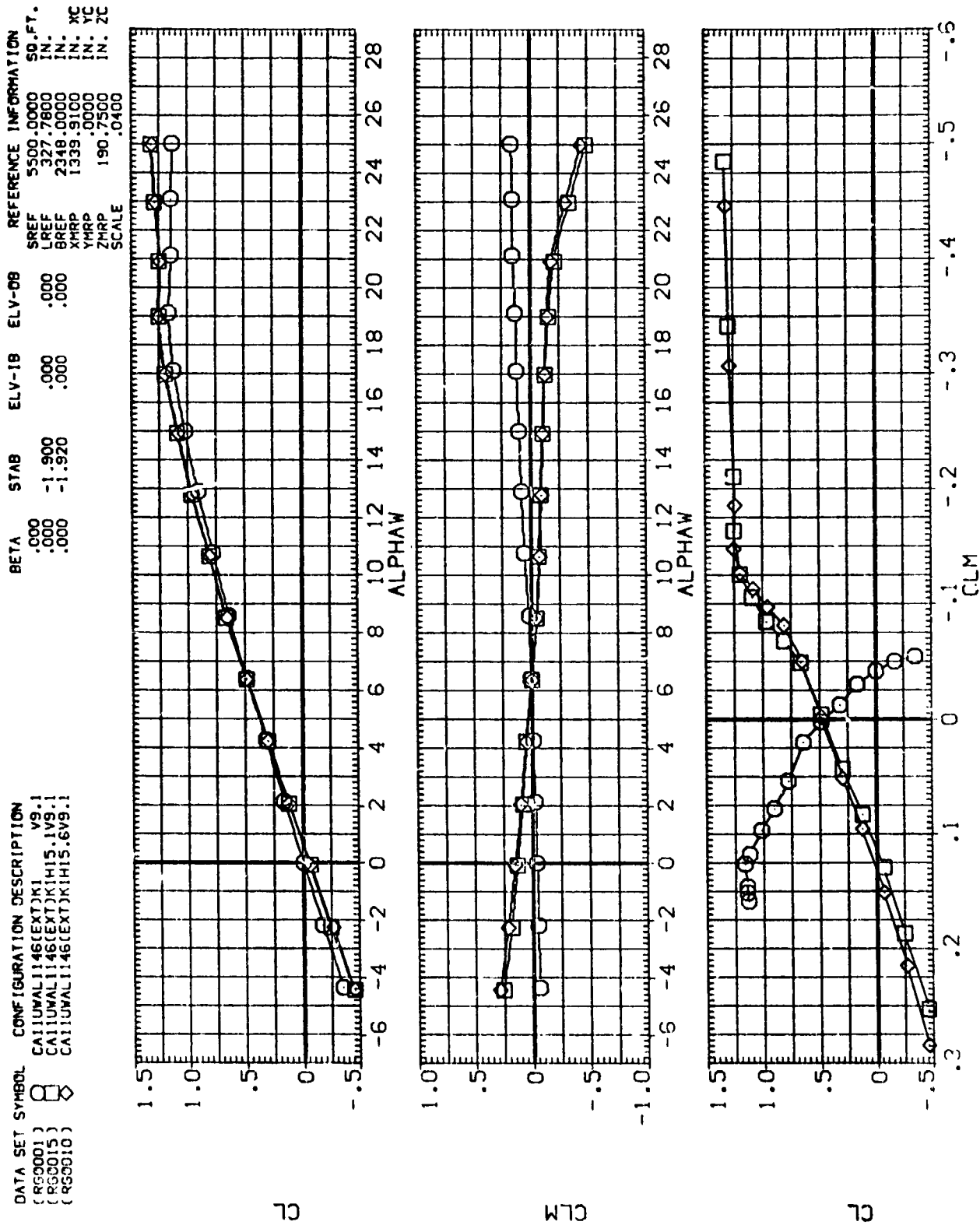


FIG. 4 EFFECT OF HORIZONTAL TIP FINS, 747 ALONE, RUDDER=0.0

(A) = 35.52

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-10	ELV-00	REFERENCE INFORMATION
(RG0001)	CALLUWAL1146(EXT)K1 V9.1	.000				SREF 5500.0000 SC.FT.
(RG0015)	CALLUWAL1146(EXT)K1H15.1V9.1	.000	-1.900	.000	.000	LREF 327.7800 IN.
(RG0010)	CALLUWAL1146(EXT)K1H15.6V9.1	.000	-1.920	.000	.000	BREF 2348.0000 IN.
						XMRP 1339.9100 IN.
						YMRP .0000 IN.
						ZMRP 130.7500 IN.
						SCALE .0400

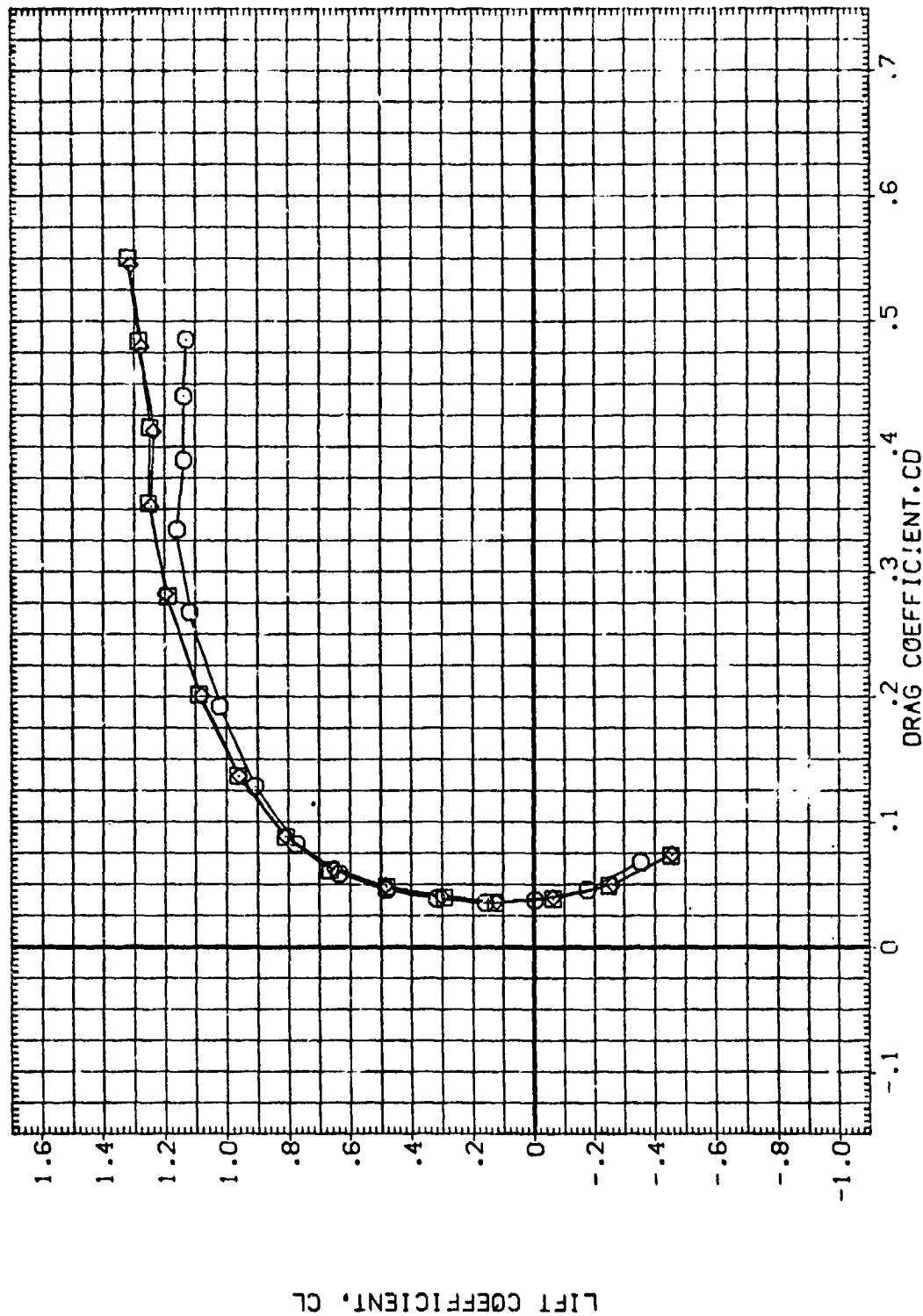


FIG. 4 EFFECT OF HORIZONTAL TIP FINS, 747 ALONE, RUDDER=0.0

(A) = 35.52



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0001)	CALLUWAL1146(EXT)K1 V9.1	.000	.000	.000	.000	SREF 5500.0000 SQ.FT.
(RG0002)	CALLUWAL1146(EXT)K1H15.1V9.1	.000	.000	.000	.000	LREF 327.7800 IN.
(RG0003)	CALLUWAL1146(EXT)K1H15.1V9.1	.000	-2.000	.000	.000	BREF 2348.0000 IN.
(RG00015)	CALLUWAL1146(EXT)K1H15.1V9.1	.000	-1.900	.000	.000	XMRP 1339.9100 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

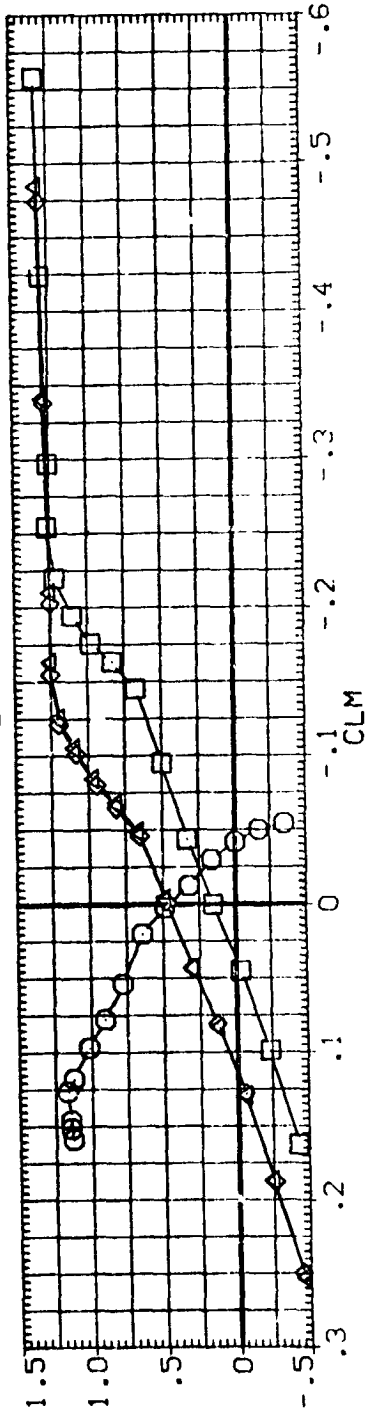
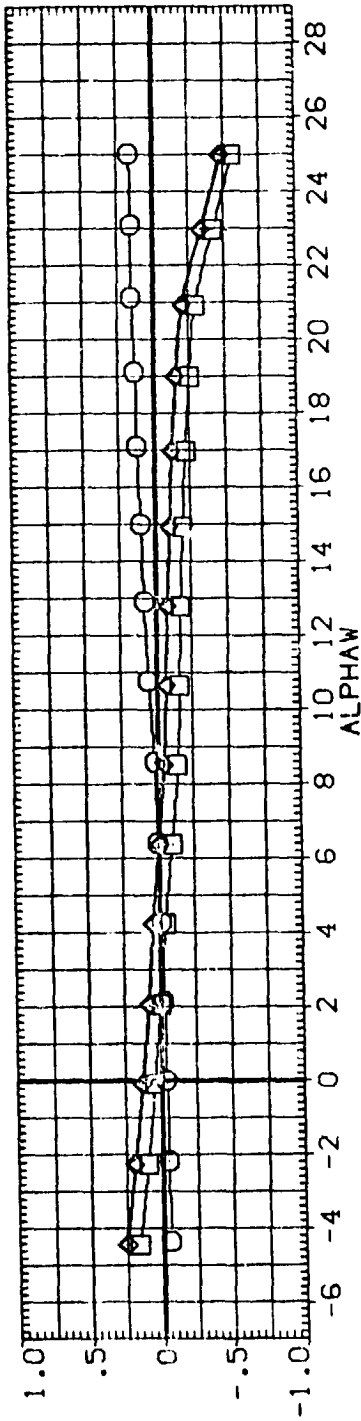
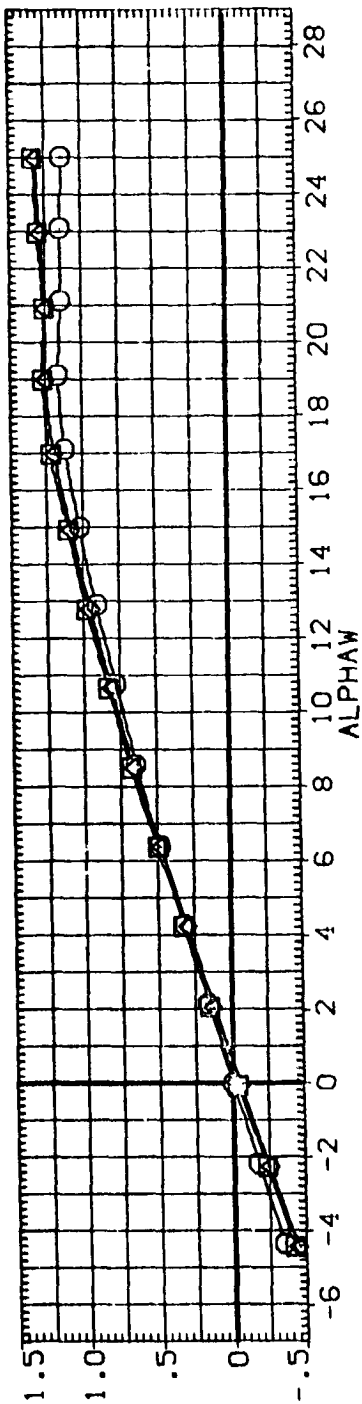


FIG. 5 STABILIZER EFFECTIVENESS, 747 ALONE, RUDDER=0.0

(ACC = 35.52

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0001)	□	CALLUWAL1146(EXT)K1 V9.1	.000	.000	.000	.000	SREF 5500.0000 SQ.FT.
(RG0002)	○	CALLUWAL1146(EXT)K1H15.1V9.1	.000	.000	.000	.000	LREF 327.7800 IN.
(RG0003)	×	CALLUWAL1146(EXT)K1H15.1V9.1	.000	-2.000	.000	.000	BREF 2348.0000 IN.
(RG0015)	×	CALLUWAL1146(EXT)K1H15.1V9.1	.000	-1.900	.000	.000	XMRP 1339.9100 IN. YC
							YMRP .0000 IN. ZC
							ZMRP 190.7500 IN. ZC
							SCALE .0400

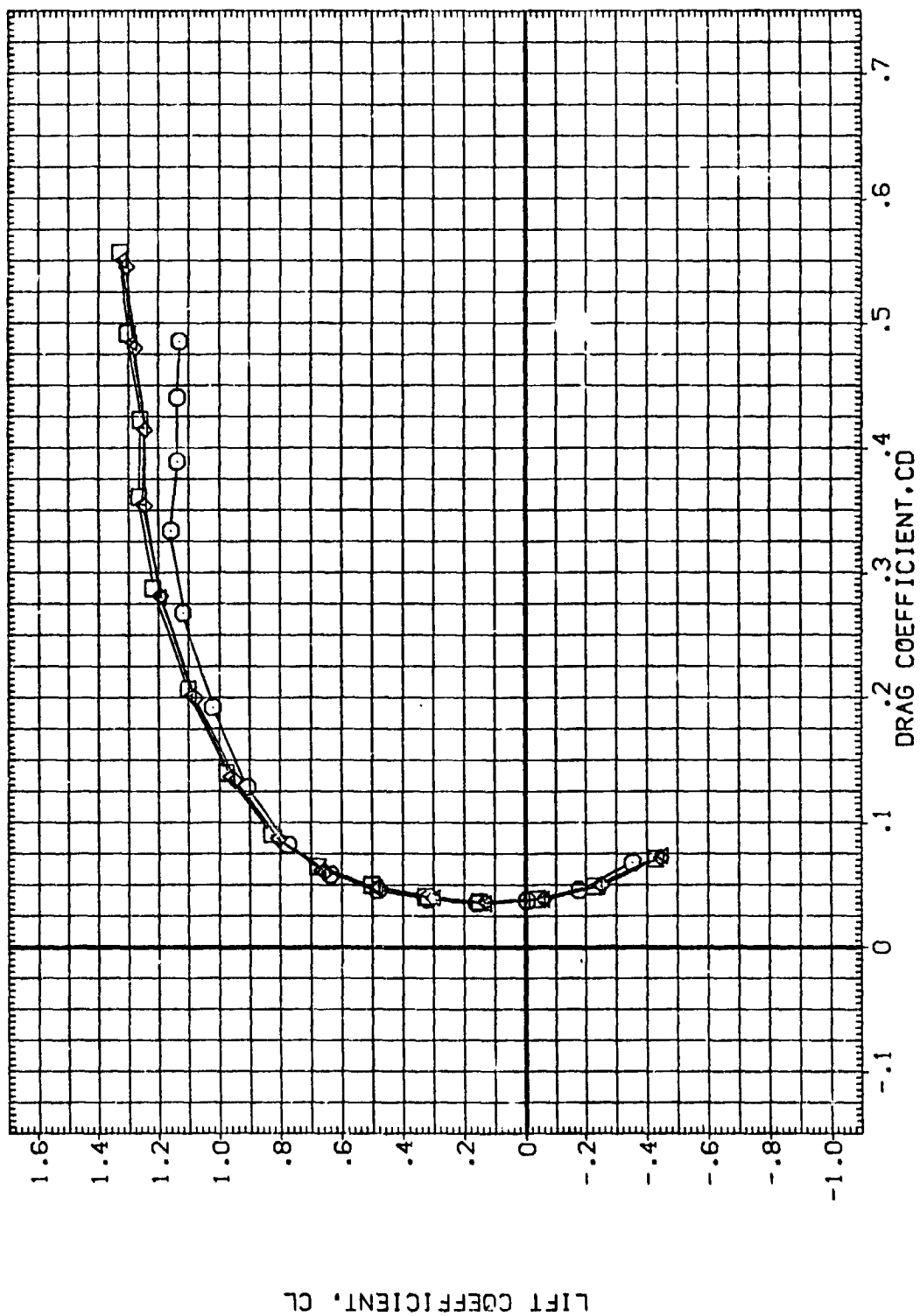


FIG. 5 STABILIZER EFFECTIVENESS, 747 ALONE, RUDDER=0.0

(A)Q = 35.52

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0001)	CA11UVAL1146(EXT)K1 V9.1	.000	-1.500	.000	.000	SREF 5500.0000 SQ.FT.
(RG0015)	CA11UVAL1146(EXT)K1H15.1V3.1	.000	-1.500	-23.000	.000	LREF 327.7800 IN.
(RG0012)	CA11UVAL1146(EXT)K1H15.1V9.1	.000	-1.920	17.000	-23.000	BREF 2348.0000 IN.
(RG0013)	CA11UVAL1146(EXT)K1H15.1V9.1	.000	-1.920	17.000	-23.000	XMRP 1339.9100 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

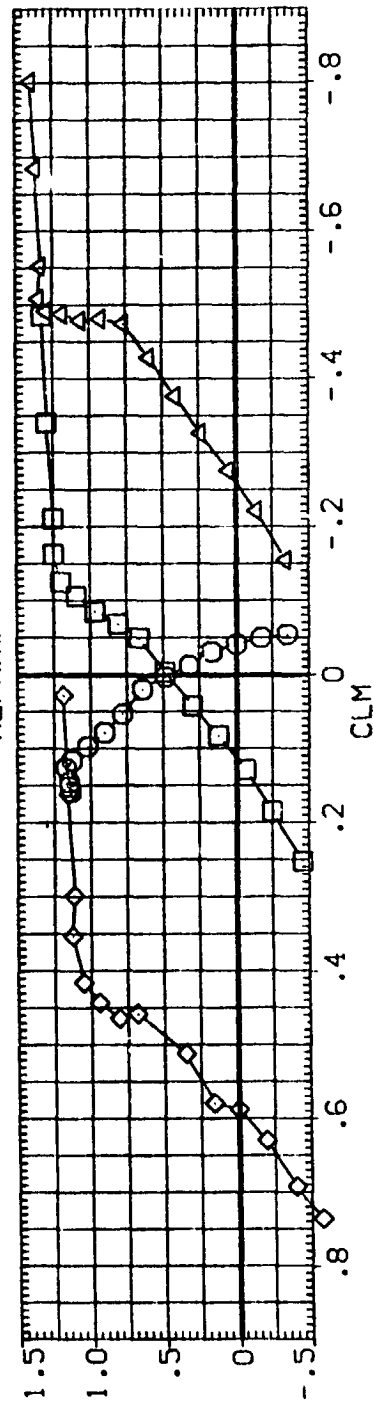
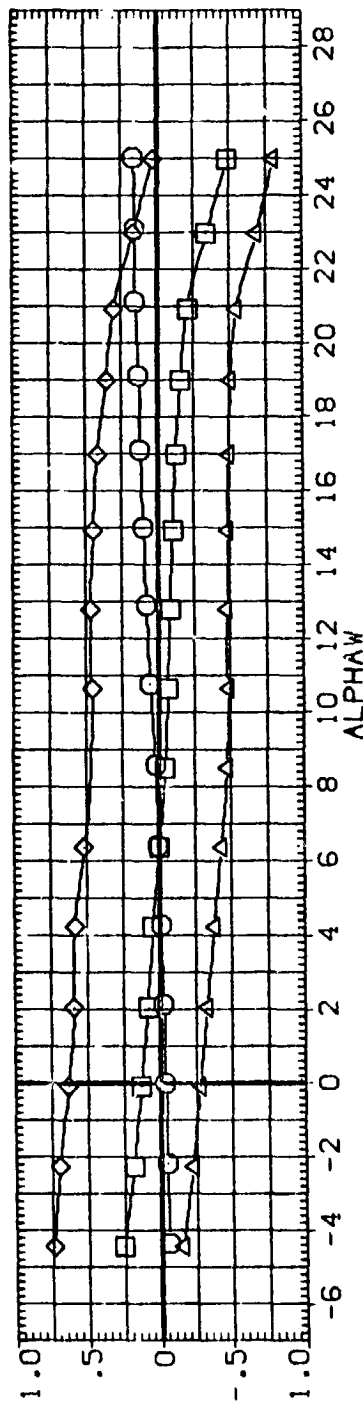
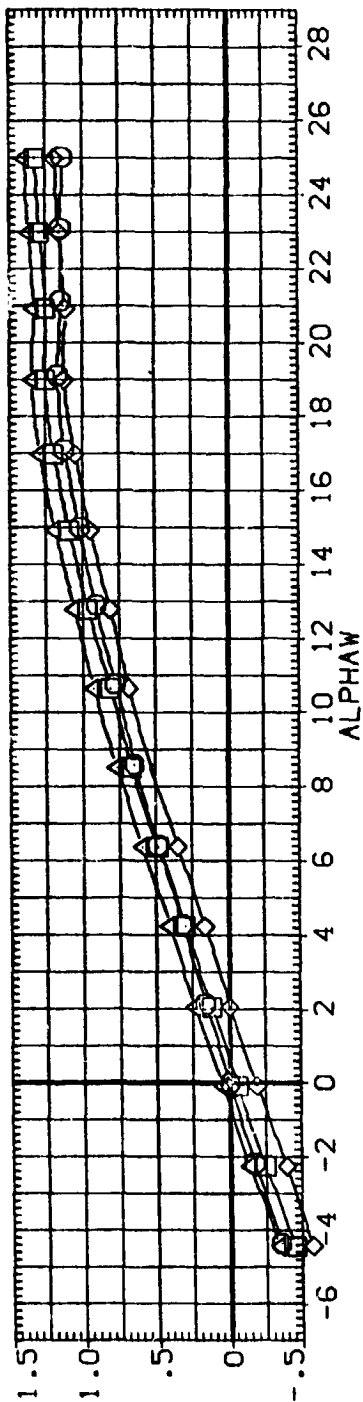


FIG. 6 ELEVATOR EFFECTIVENESS, 747 ALONE, RUDDER=0.0

(A) = 35.52

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0001)	CALLUWAL1146(EXT)K1 V9.1	.000	-1.900	.000	.000	SREF 5500.0000 SQ.FT.
(RG0015)	CALLUWAL1146(EXT)K1H15.1V9.1	.000	-1.900	.000	.000	LREF 327.7800 IN.
(RG0012)	CALLUWAL1146(EXT)K1H15.1V9.1	.000	-1.900	-23.000	-23.000	BREF 2348.0000 IN.
(RG0013)	CALLUWAL1146(EXT)K1H15.1V9.1	.000	-1.920	17.000	17.000	XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

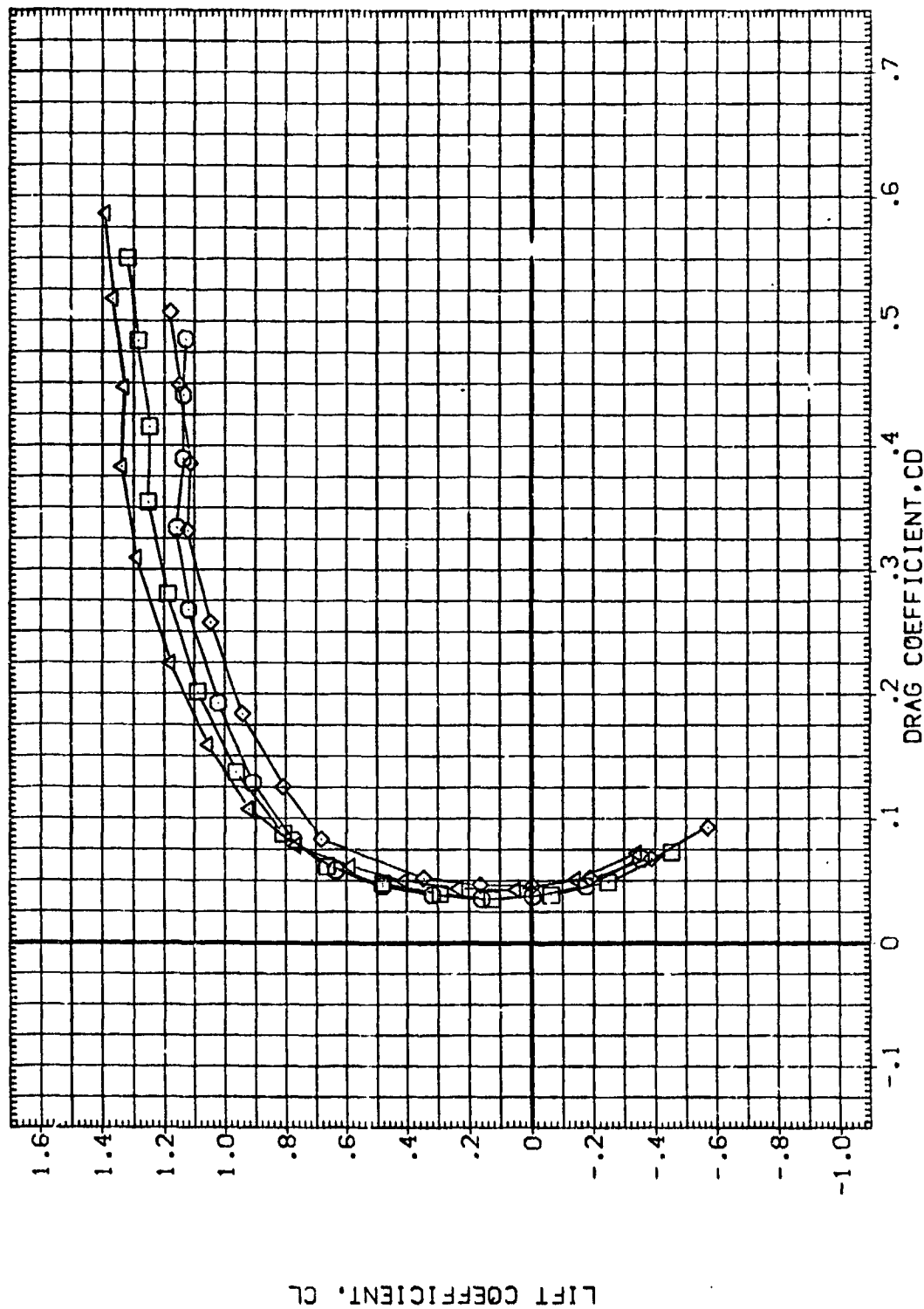


FIG. 6 ELEVATOR EFFECTIVENESS, 747 ALONE, RUDDER=0.0

(A)C = 35.52

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0001)	CALLUVAL1146(EXT)K1 V9.1	.000	-1.920	.000	.000	SREF 5500.0000 SQ.FT.
(RG0010)	CALLUVAL1146(EXT)K1H15.6V9.1	.000	-1.920	-23.000	-23.000	LREF 327.7800 IN.
(RG0011)	CALLUVAL1146(EXT)K1H15.6V9.1	.000	-1.920	17.000	17.000	BREF 2348.0000 IN.
(RG0014)	CALLUVAL1146(EXT)K1H15.6V9.1	.000	-1.920	17.000	17.000	XMRP 1339.9100 IN.
						YMRP 190.7500 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

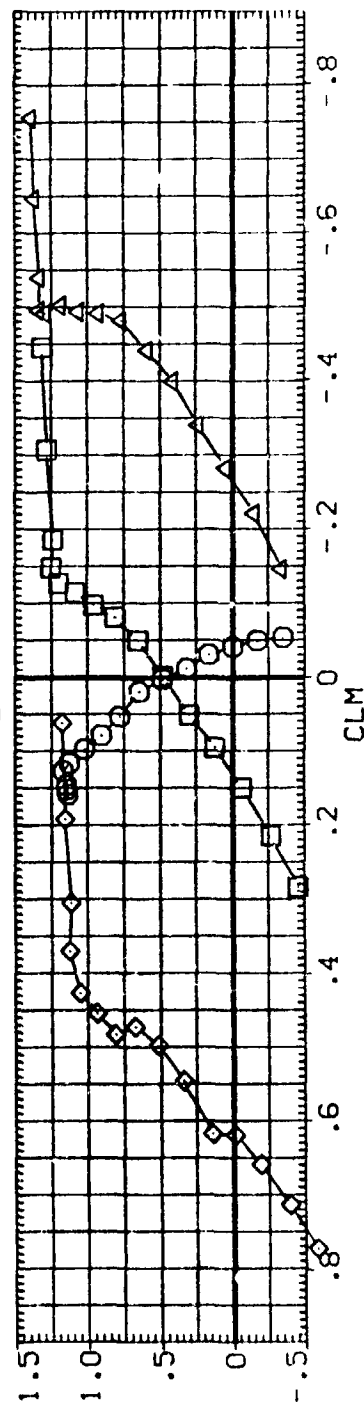
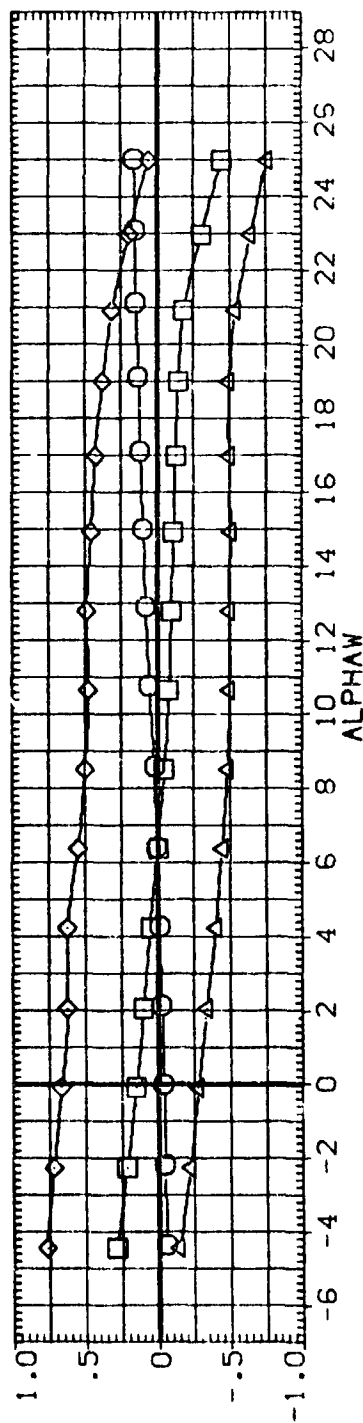
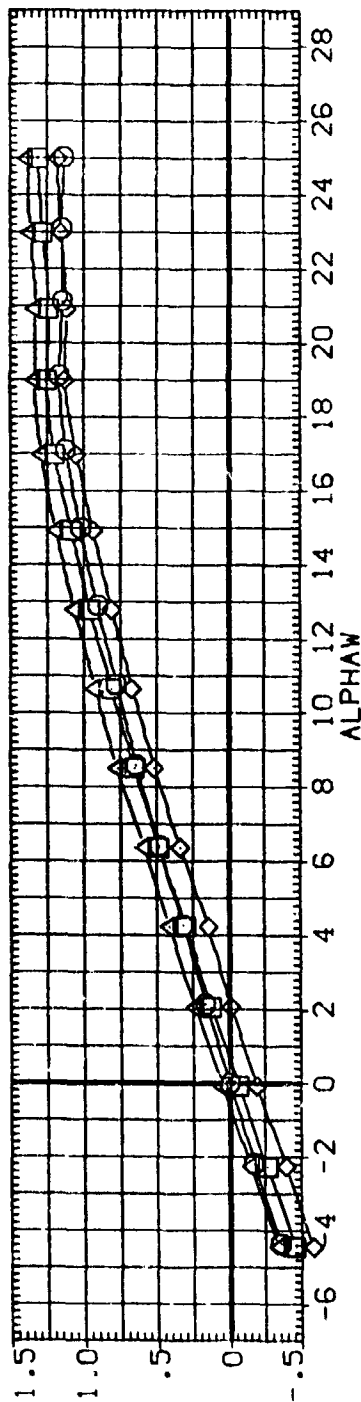


FIG. 7 ELEVATOR EFFECTIVENESS IN PRESENCE OF HORIZ. TIP FINS, 747 ALONE, RUD=0.0

(A)C = 35.52

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0001)	CA11UWAL1146(EXT)K1 V9.1	.000	-1.920	.000	.000	SREF 5500.0000 SO.FT.
(RG0010)	CA11UWAL1146(EXT)K1H15.6V9.1	.000	-1.920	-23.000	.000	LREF 327.7800 IN.
(RG0011)	CA11UWAL1146(EXT)K1H15.6V9.1	.000	-1.920	17.000	.000	BREF 2348.0000 IN.
(RG0014)	CA11UWAL1146(EXT)K1H15.6V9.1	.000	-1.920	17.000	.000	XMRP 1339.9100 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

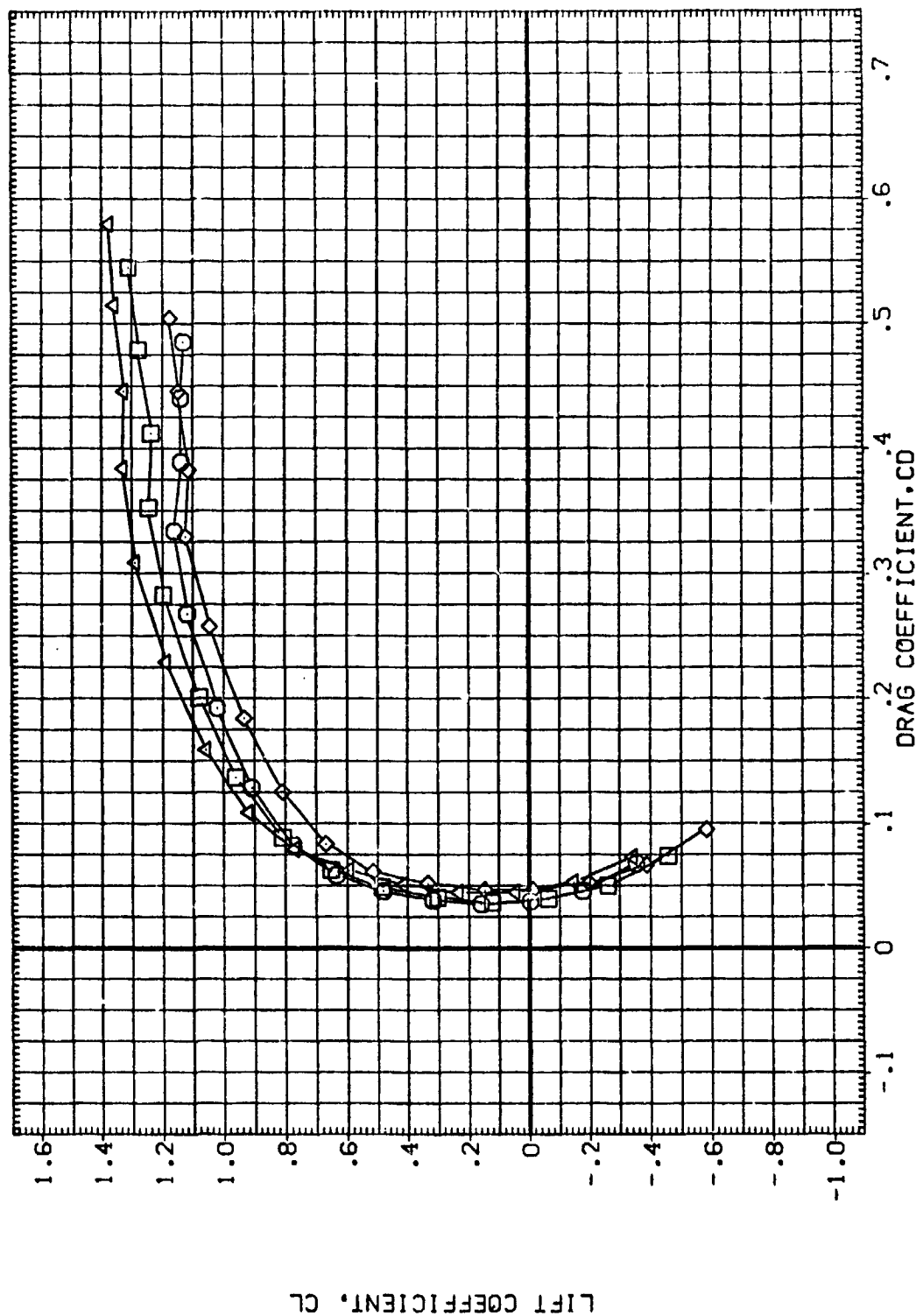


FIG. 7 ELEVATOR EFFECTIVENESS IN PRESENCE OF HORIZ. TIP FINS, 747 ALONE, RUD=0.0  
 (A)0 = 35.52 PAGE 8

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-18	ELV-OR	REFERENCE INFORMATION
(RG0003)	CALLUWAL1146(EXT)KIH15.1V9.1	.000	-2.000	.000	.000	SREF 5500.0000 SQ.FT.
(RG0027)	CALLUWAL1146(EXT)KIH15.6V9.4	.000	-1.880	.000	.000	LREF 327.7800 IN.
(RG0028)	CALLUWAL1146(EXT)KIH15.6V9.4	.000	-1.880	.000	.000	BREF 2348.0000 IN.
(RG0062)	CALLUWAL1146(EXT)KIH15.6V9.4	.000	-1.920	.000	.000	XHRP 1339.9100 IN.
(RG0042)	CALLUWAL1146(EXT)KIH15.6V9.4	.000	-1.970	.000	.000	YHRP 190.7500 IN.
(RG0055)	CALLUWAL1146(EXT)KIH15.6V9.4	.000	-1.920	.000	.000	ZHRP 190.7500 IN.
						SCALE .0400

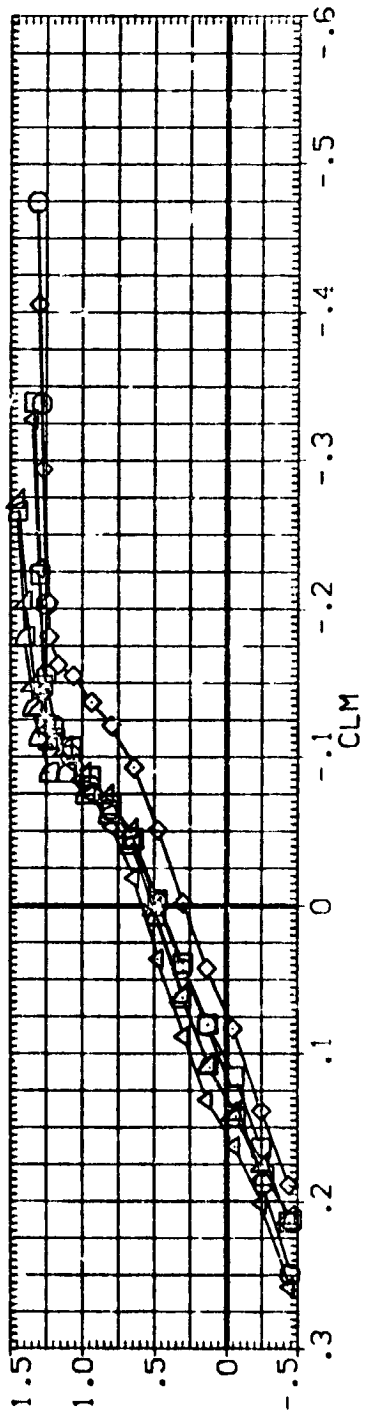
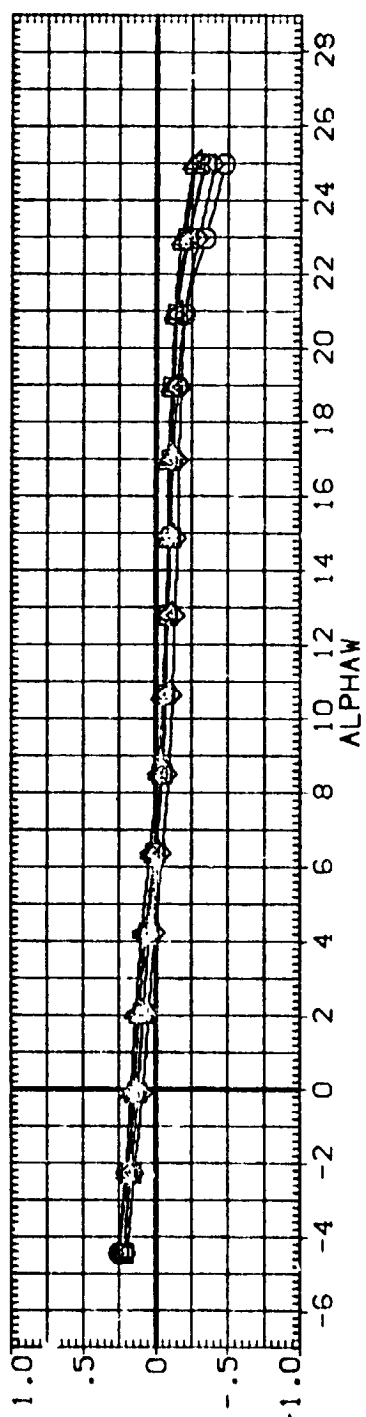
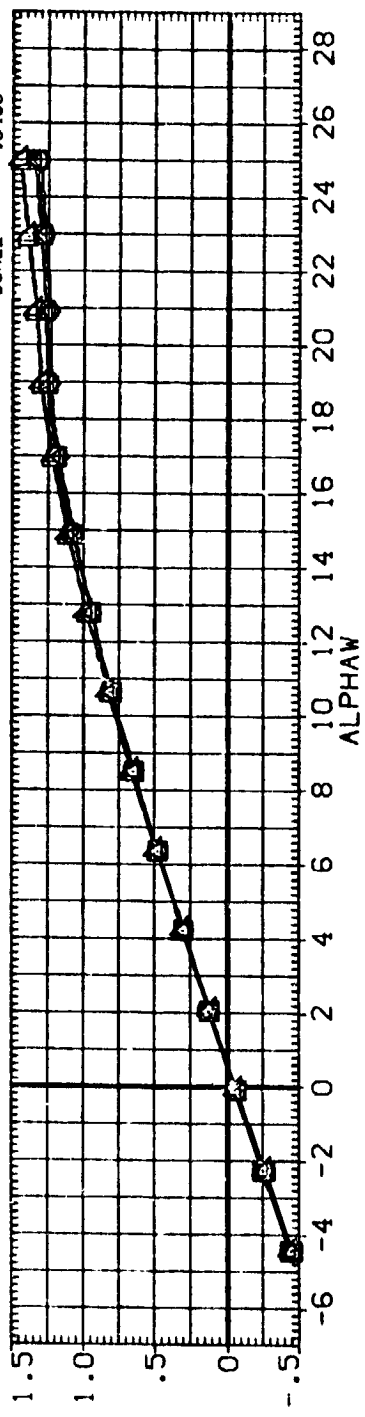


FIG. 8 LONGITUDINAL CHARACTERISTICS OF STUDY CONFIGS. 1.1A, 3A.5 AND 5A, RUD=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0003)	CA111UWAL1146(EXT)K1H15.1V9.1	.000	-2.000	.000	.000	SREF 5500.0000 SC.FT.
(RG0027)	CA111UWAL1146(EXT)K1H15.6V9.4	.000	-1.880	.000	.000	LREF 327.7800 IN.
(RG0028)	CA111UWAL1146(EXT)K1H15.6V9.4	.000	-1.880	.000	.000	BREF 2348.0000 IN.
(RG0062)	CA111UWAL1146(EXT)K1H15.6V9.4	.000	-1.820	.000	.000	XMRP 1339.9100 IN.
(RG0042)	CA111UWAL1146(EXT)K1H15.6V9.4	.000	-1.870	.000	.000	YMRP 190.7500 IN.
(RG0055)	CA111UWAL1146(EXT)K1H15.6V9.4	.000	-1.920	.000	.000	ZMRP 190.7500 IN.
						SCALE .0400

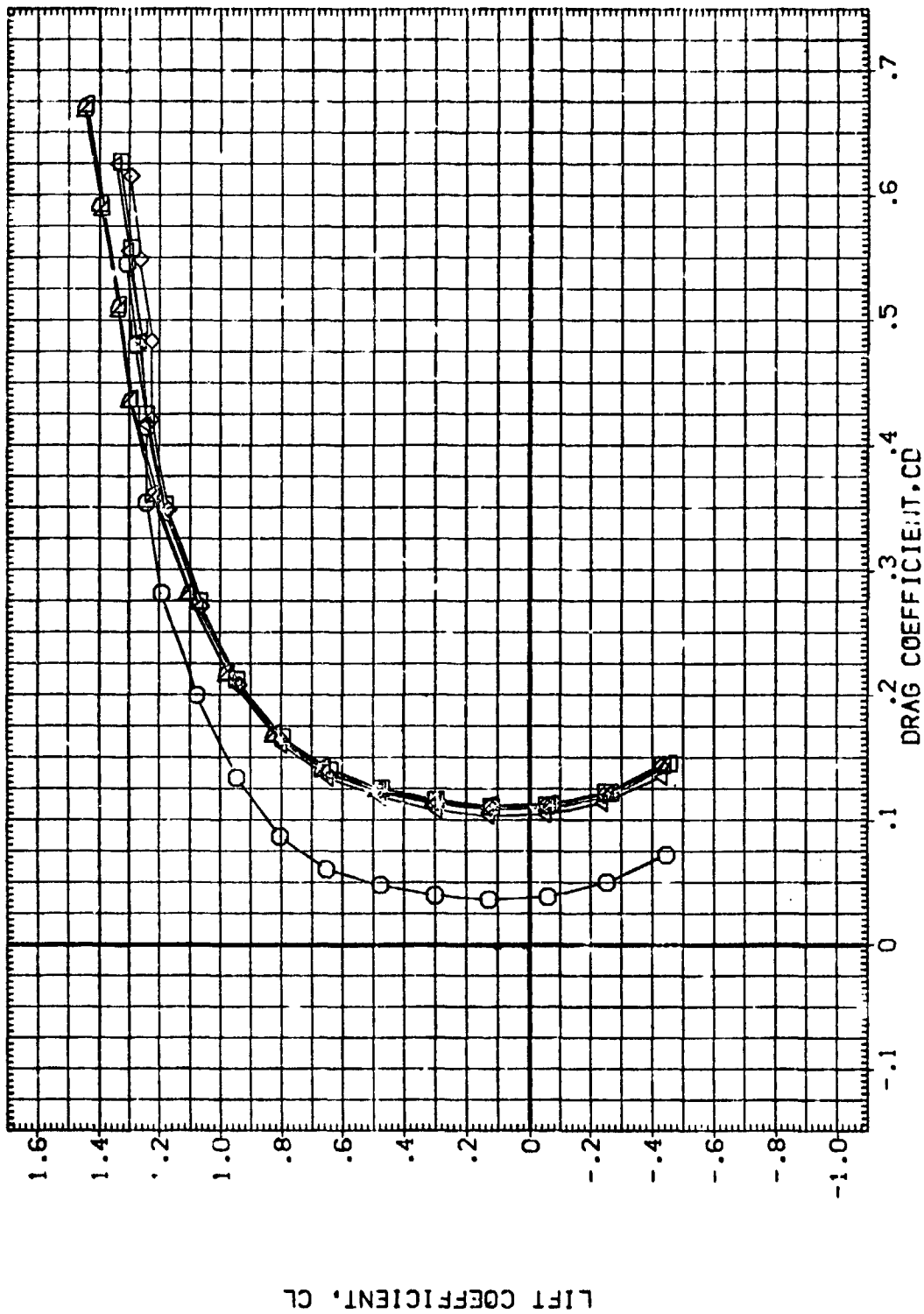


FIG. 8 LONGITUDINAL CHARACTERISTICS OF STUDY CONFIGS. 1, 1A, 3A, 5 AND 5A, RUD=0.0

(A)Q = 35.53

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0038)	CA11UWAL1146(EXT)K1 V9.1	.000				SREF 5500.0000 SQ.FT.
(RG0072)	CA11UWAL1146(EXT)K1 V9.1	.000				LREF 327.7800 IN.
(RG0088)	CA11UWAL1146(EXT)K1H15.7V9.4	.020	.020	.000	.000	BREF 2348.0000 IN. XC
(RG0080)	CA11UWAL1146(EXT)K1H15.7V9.4	.000	-1.930	.000	.000	XMRP 1339.9100 IN. VC
(RG0089)	CA11UWAL1146(EXT)K1H15.7V9.4	.000	-4.000	.000	.000	ZMRP 190.7500 IN. ZC
						SCALE .0400

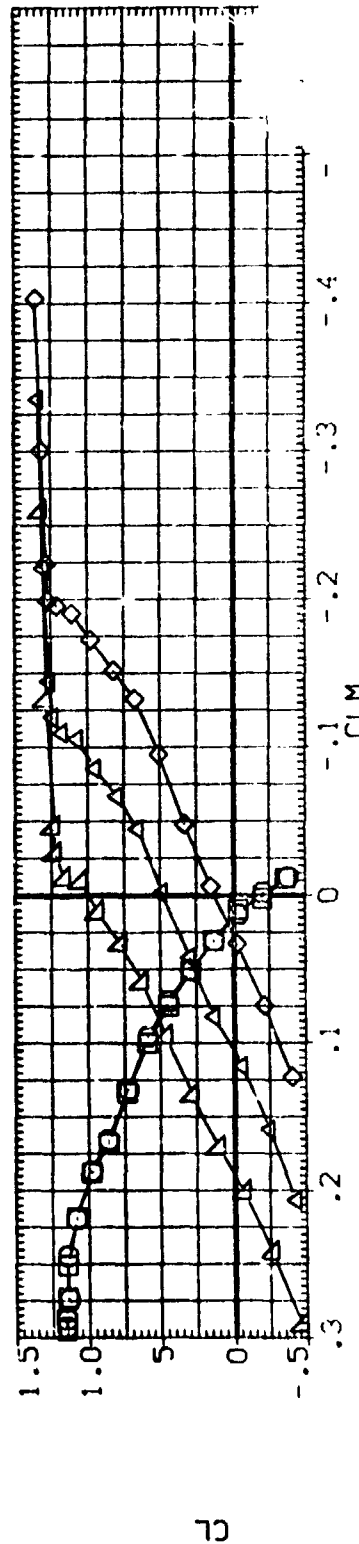
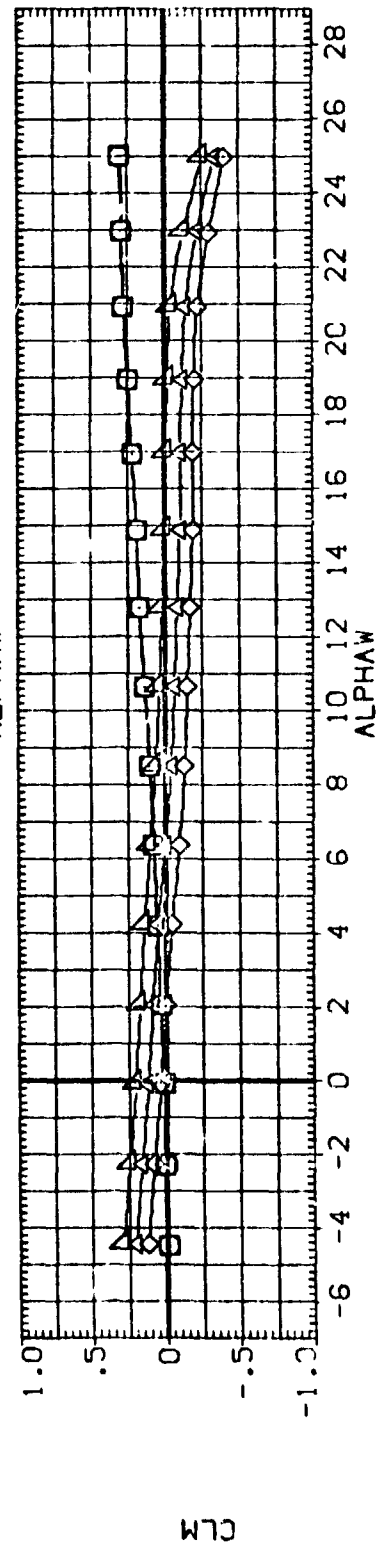
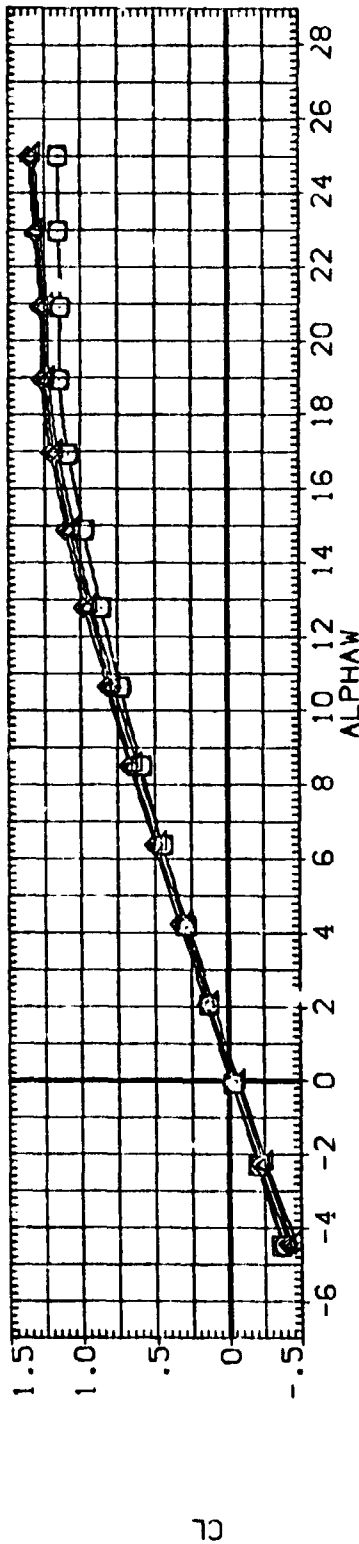


FIG. 9 STABILIZER EFFECTIVENESS, CONF. 1, RUDDER=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0038)	CAL1UWAL1146(EXT)K1 V9.1	.000				SREF 5500.0000 S. FT.
(RG0072)	CAL1UWAL1145(EXT)K1 V9.1	.000				LREF 327.7800 IN.
(RG0088)	CAL1UWAL1146(EXT)K1H15.7V9.4	.020		.000	.000	BREF 2348.0000 IN.
(RG0080)	CAL1UWAL1146(EXT)K1H15.7V9.4	.000	-1.930	.000	.000	XMRP 1339.9100 IN.
(RG0089)	CAL1UWAL1146(EXT)K1H15.7V9.4	.000	-4.000	.000	.000	YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

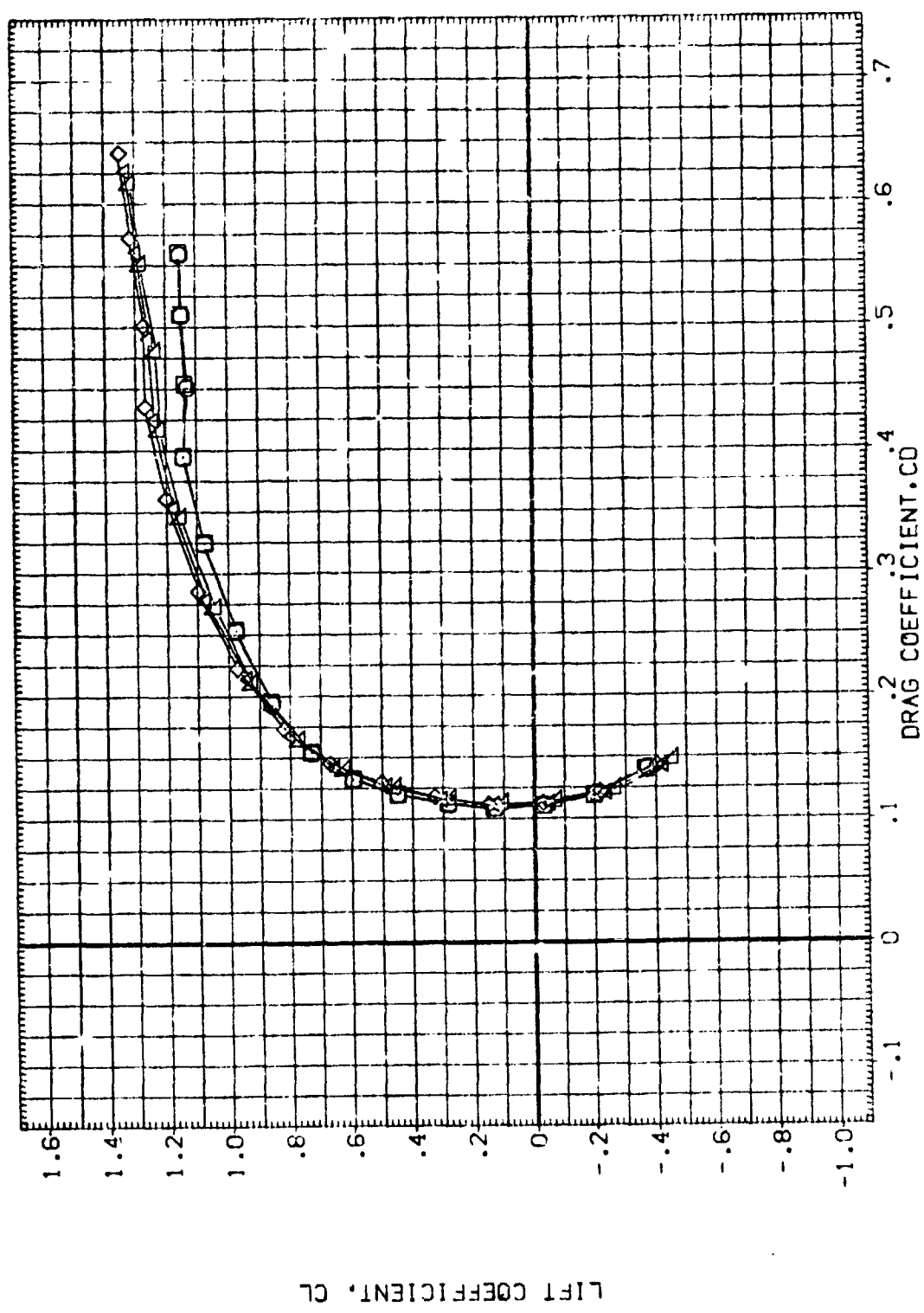


FIG. 9 STABILIZER EFFECTIVENESS, CONF. 1, RUDDER=0.0

(A) = 35.98

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(R60038)	CALLUWAL1146(EXT)K1 V9.1	.000				SREF 5500.0000 SQ.FT.
(R60072)	CALLUWAL1146(EXT)K1 V9.1	.000				LREF 327.7800 IN.
(R60080)	CALLUWAL1146(EXT)K1H15.7V9.4	.000	-1.930	.000	.000	BREF 2348.0000 IN.
(R60086)	CALLUWAL1146(EXT)K1H15.7V9.4	.000	-1.900	17.000	17.000	YHRP 1333.9100 IN.
(R60087)	CALLUWAL1146(EXT)K1H15.7V9.4	.000	-1.900	-23.000	-23.000	ZHRP 190.7500 IN.
						SCALE .0400

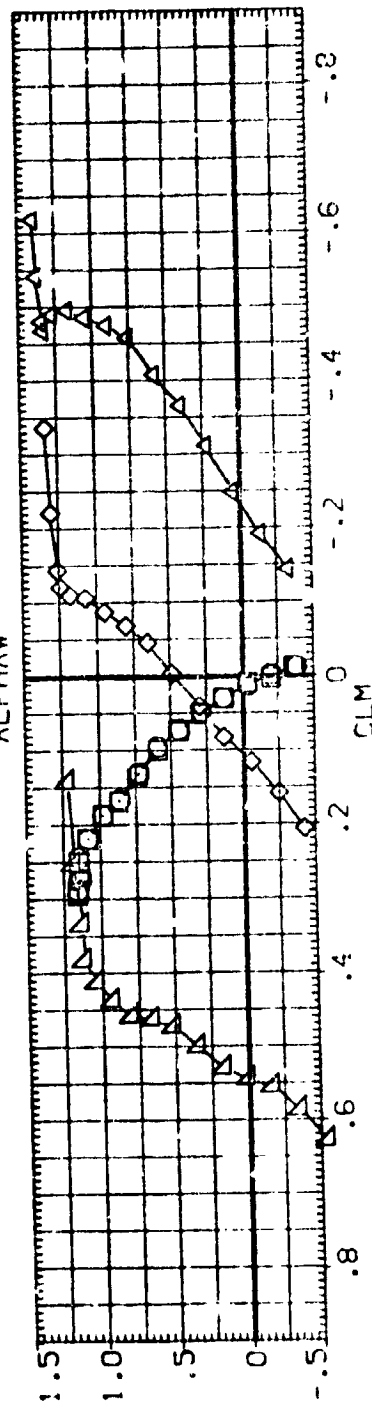
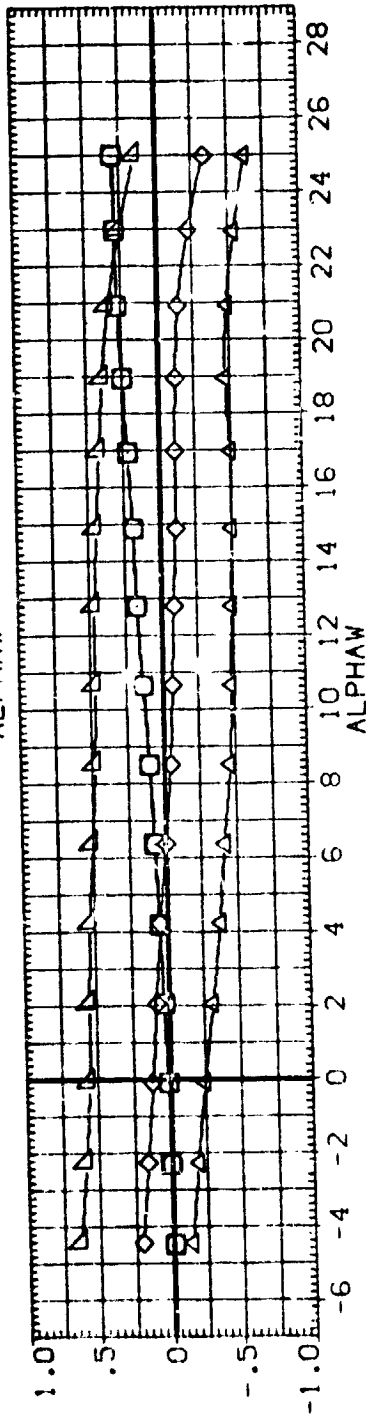
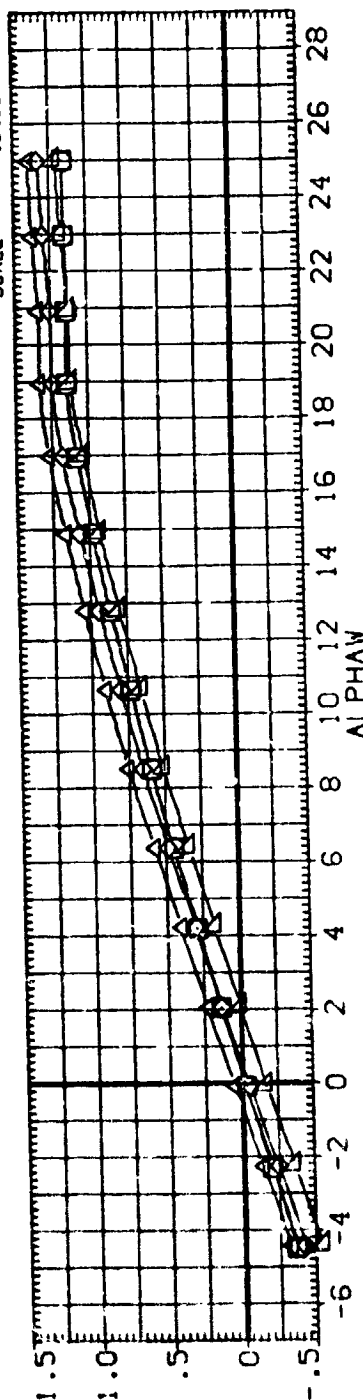


FIG. 10 ELEVATOR EFFECTIVENESS, CONF. 1, RUDDER=0.0

CLM = 35.99

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0038)	CA11UWAL1146(EXT)X1 V9.1	.000				SREF 5500.0000 SQ.Ft.
(RG0072)	CA11UWAL1146(EXT)K1 V9.1	.000				LREF 327.7800 IN.
(RG0080)	CA11UWAL1146(EXT)K1H15.7V9.4	.000	-1.930	.000	.000	BREF 2348.0000 IN.
(RG0086)	CA11UWAL1146(EXT)K1H15.7V9.4	.000	-1.900	17.000	17.000	XMRP 1339.9100 IN.
(RG0087)	CA11UWAL1146(EXT)K1H15.7V9.4	.000	-1.900	-23.000	-23.000	YMRP 190.7500 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

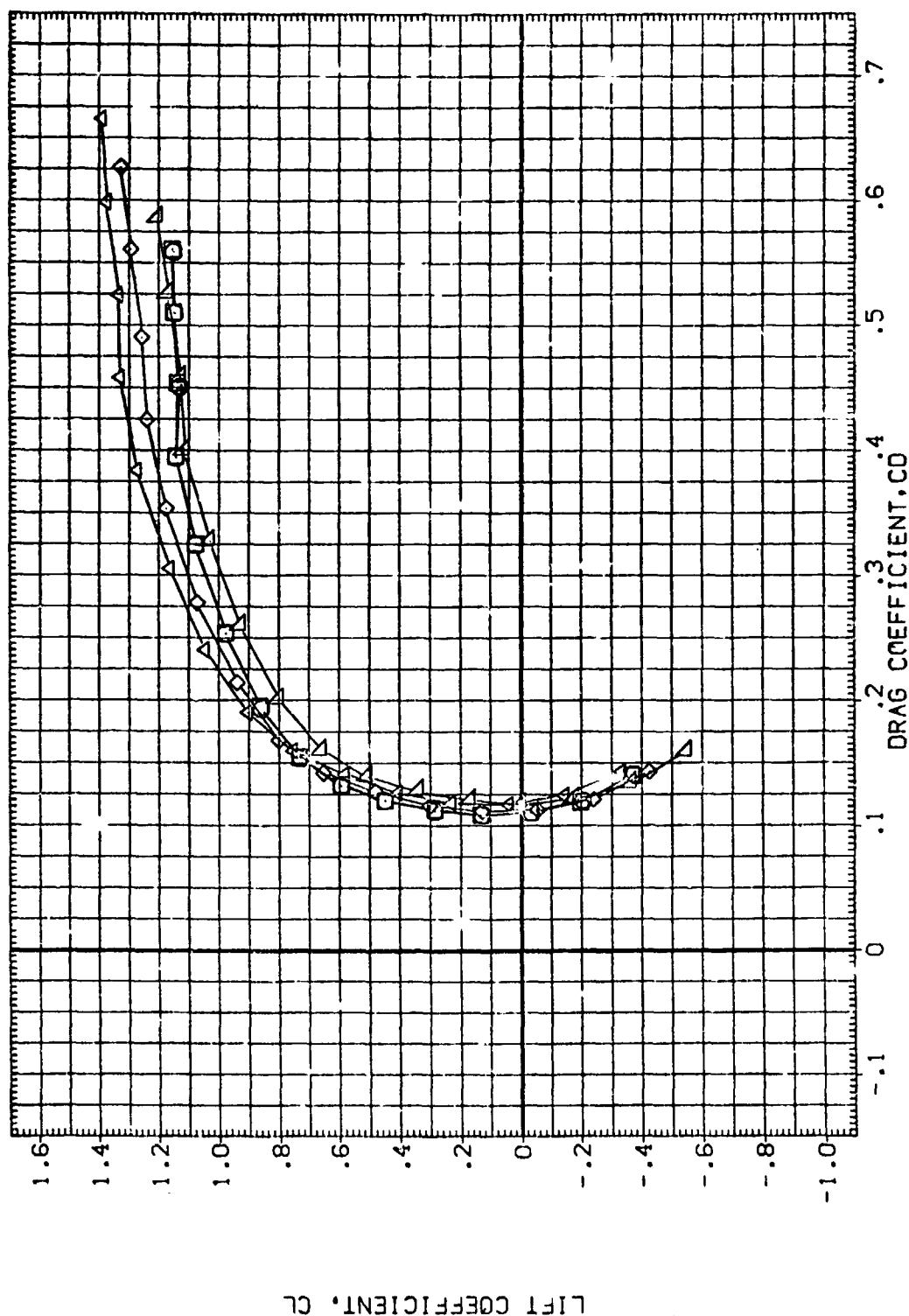


FIG. 10 ELEVATOR EFFECTIVENESS, CONF. 1, RUDDER=0.0

(A) = 35.98

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0070)	CA11UWAL1146(EXT)K1 V9.1	.000	-1.920	.000	.000	SREF 5500.0000 SO.FT. IN.
(RG0062)	CA11UWAL1146(EXT)K1H15.6V9.4	.000	-1.920	.000	.000	LREF 327.7800 IN.
(RG0065)	CA11UWAL1146(EXT)K1 H15.12V9.4	.000	-1.920	.000	.000	BREF 2348.0000 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

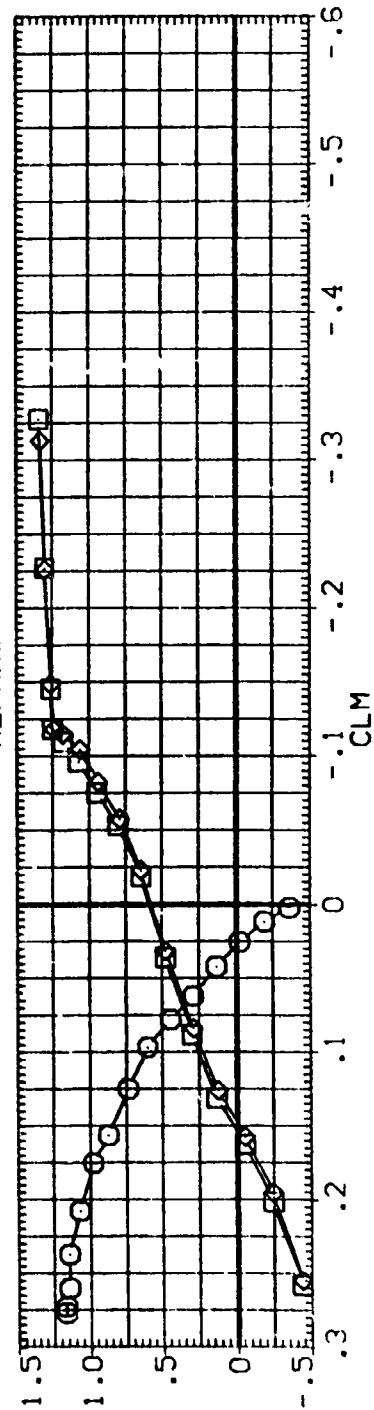
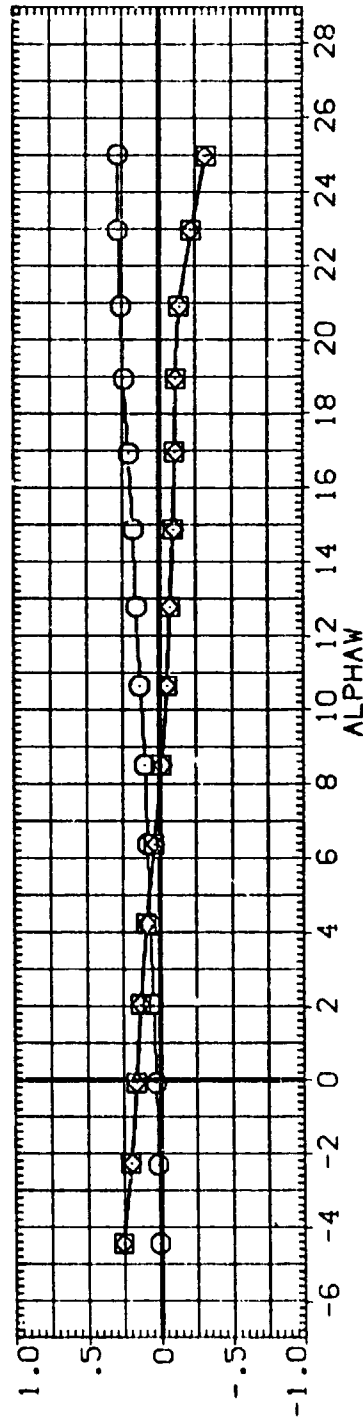
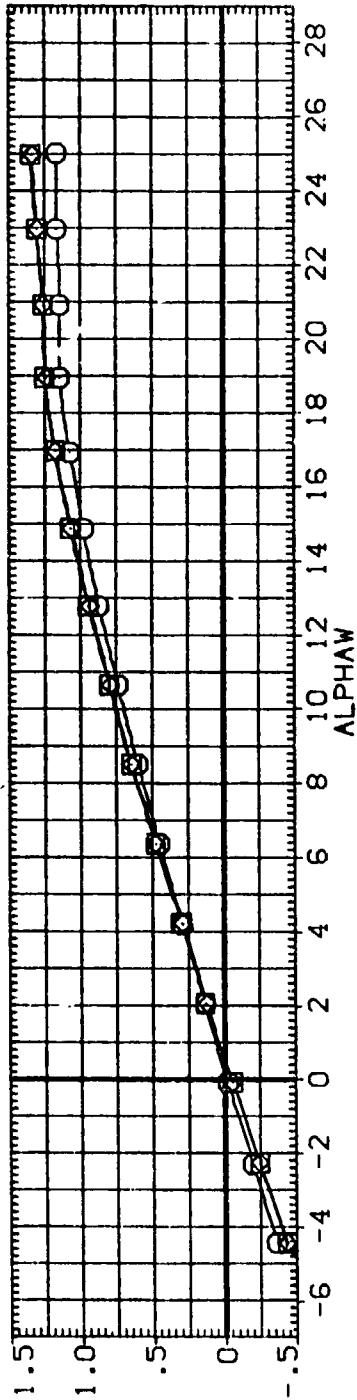


FIG. 11 EFFECT OF VERTICAL FINS ON LONGITUDINAL CHARACTERISTICS, CONF. 1, RUD=0.

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0070)	CALLUWAL1146(EXT)K1 V9.1	.000				SREF 5500.0000 SQ.FT.
(RG0062)	CALLUWAL1146(EXT)K1H15.6V9.4	.000	-1.920	.000	.000	LREF 32.7800 IN.
(RG0065)	CALLUWAL1146(EXT)K1 H15.12V9.4	.000	-1.920	.000	.000	BREF 23.8.0300 IN.
						XMRP 1339.9100 IN. XC
						ZMRP .0000 IN. YC
						SCALE 190.7200 IN. ZC

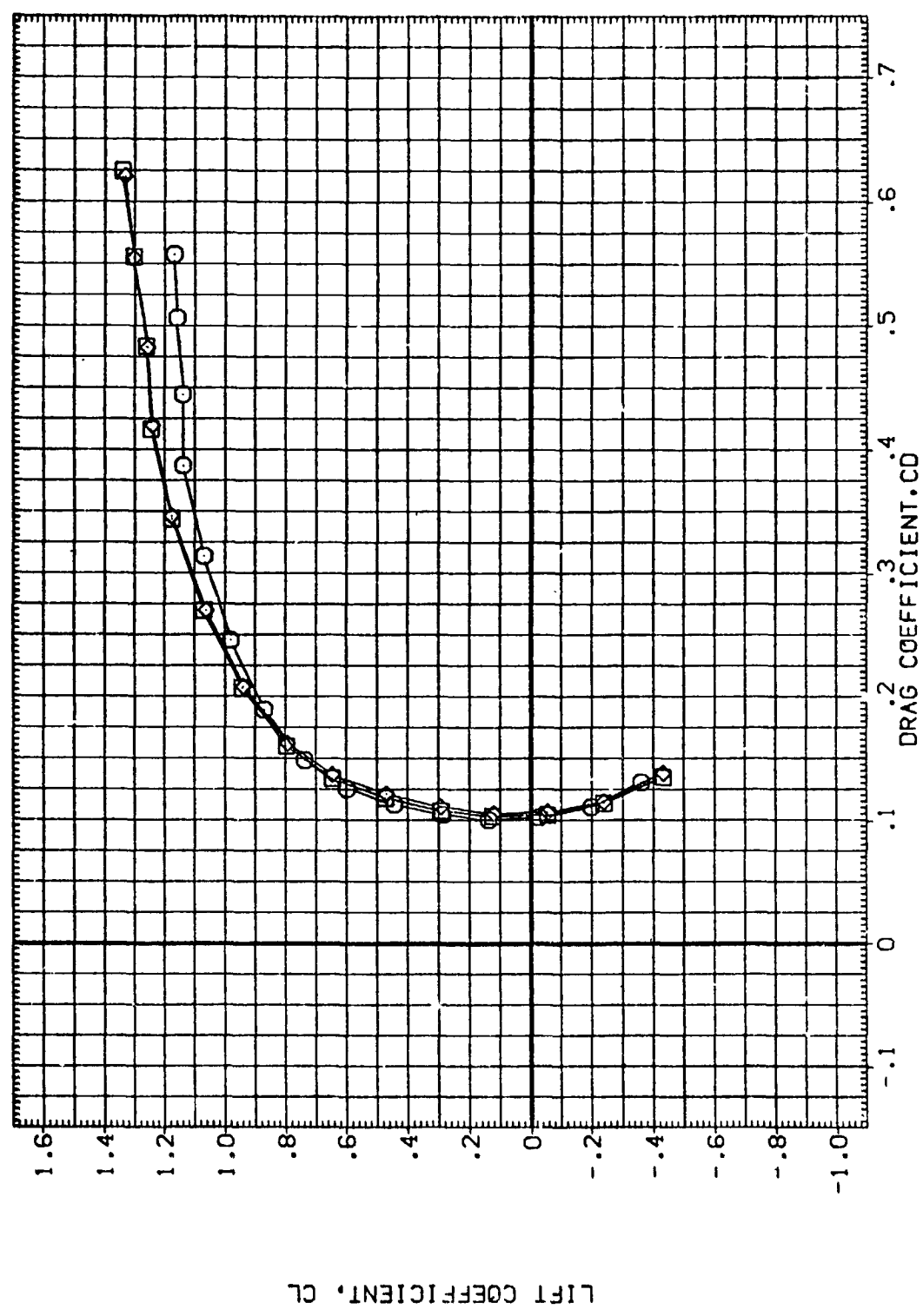



FIG. 11 EFFECT OF VERTICAL FINS ON LONGITUDINAL CHARACTERISTICS, CONF. 1, RUD=0.  
 (A)Q = 35.96 PAGE 16

DATA SET SYMBOL (RG0039) (RG0042) 

CONFIGURATION DESCRIPTION  
 C111UWAL1146(EXT)K1H1S.6V9.1C2V11 AT86AT87 T28.1  
 C111UWAL1146(EXT)K1H1S.6V9.1C1V11 AT86AT87 T28.1

BETA STAB ELV-1B ELV-0B  
 .000 -1.970 .000  
 .000 -1.970 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN. XC  
 YMRP .0000 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0400

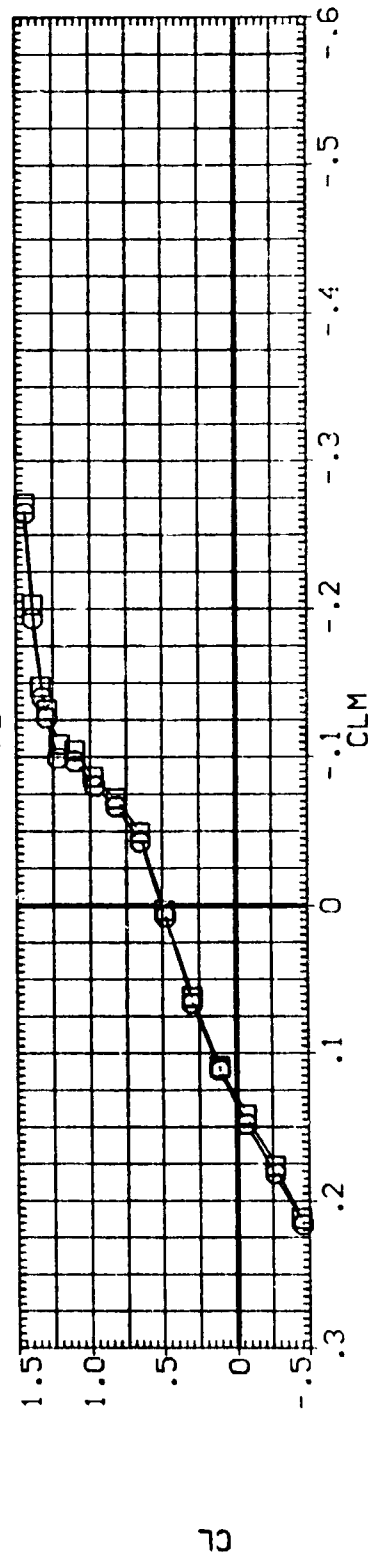
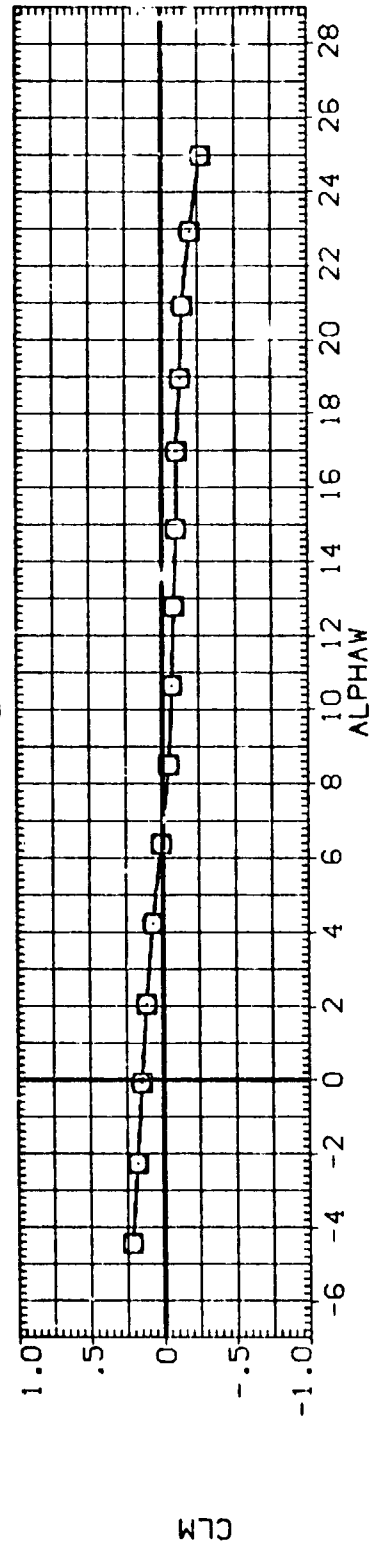
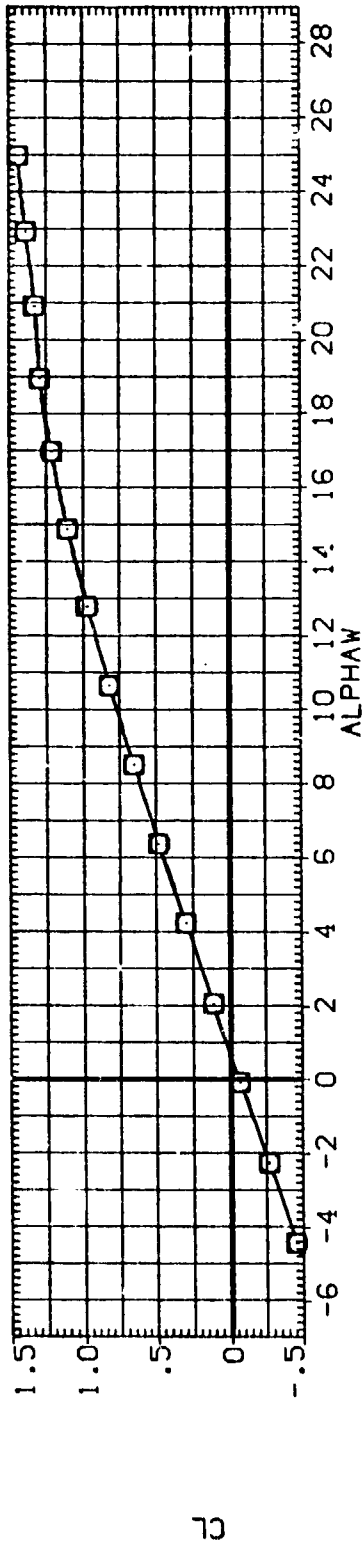


FIG. 12 EFFECT OF BOOM LENGTH ON LONGITUDINAL CHARACTERISTICS, CONF. 5, RUD=0.0  
 (A)O = 36.04

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0039)	CA11UWAL1146(EXT)K1H15.6V9.1C2V11 AT86AT87 T28.1	.000	-1.970	.000	.000	SREF 5500.0000 SQ.FT.
(RG0042)	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000	-1.970	.000	.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

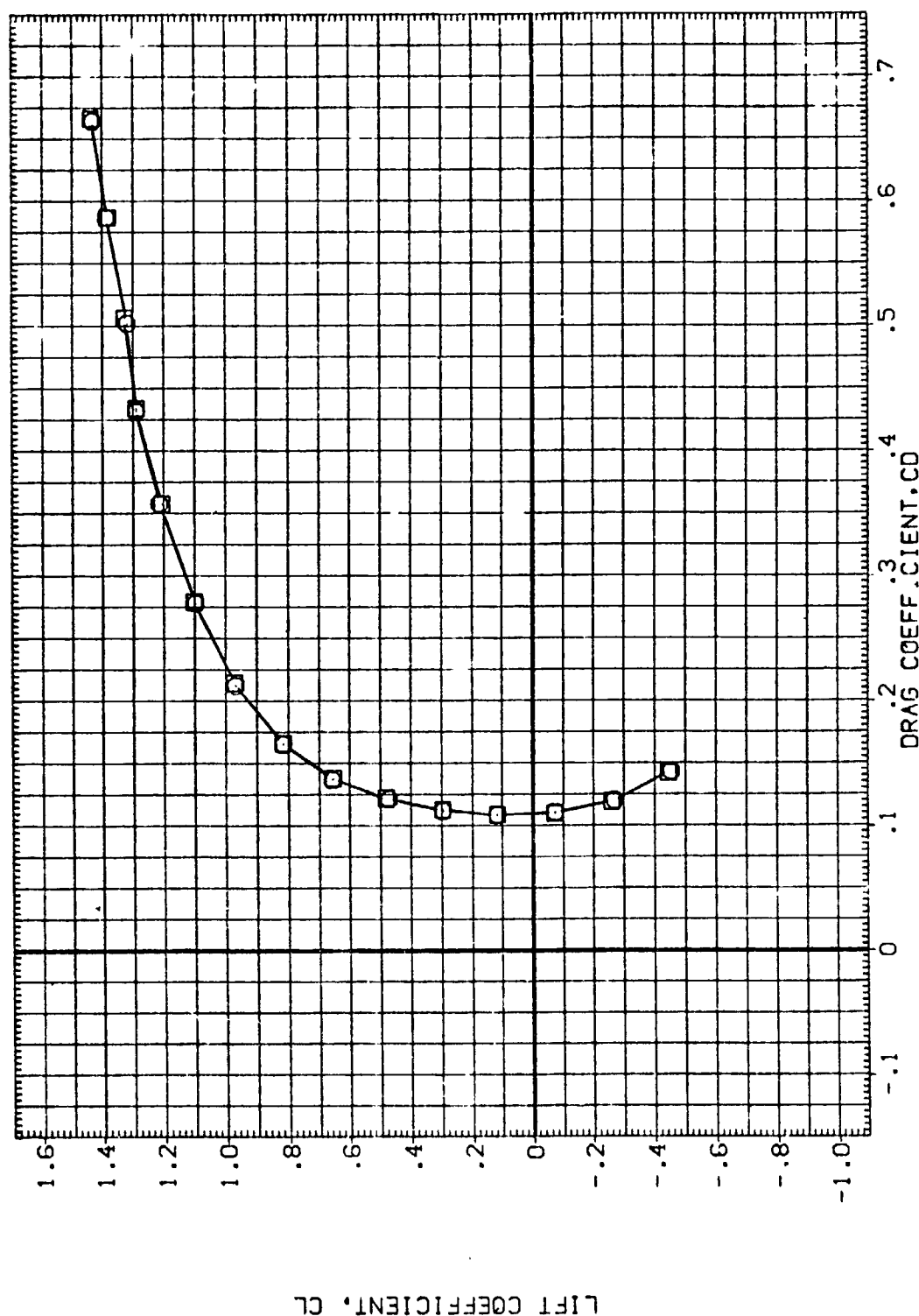


FIG. 12 EFFECT OF BOOM LENGTH ON LONGITUDINAL CHARACTERISTICS, CONF. 5, RUD=0.0  
(A)Q = 36.04 PAGE 18

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-18	ELV-08	REFERENCE INFORMATION
(R6021)	CALLUWAL1146(EXT)K1 V9.1C1 AT86AT87 T28.1	.000				SREF 5500.0000 SQ.FT.
(R60048)	CALLUWAL1146(EXT)K1 V9.1C1 AT86AT87 T28.1	.000				LREF 327.7800 IN.
(R60110)	CALLUWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000	.000	.000	.000	BREF 2348.0000 IN.
(R60099)	CALLUWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000	-1.960	.000	.000	XMRP 1339.9100 IN. XC
(R60111)	CALLUWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000	-4.000	.000	.000	ZMRP .0000 IN. YC
						SCALE 190.7500 IN. ZC

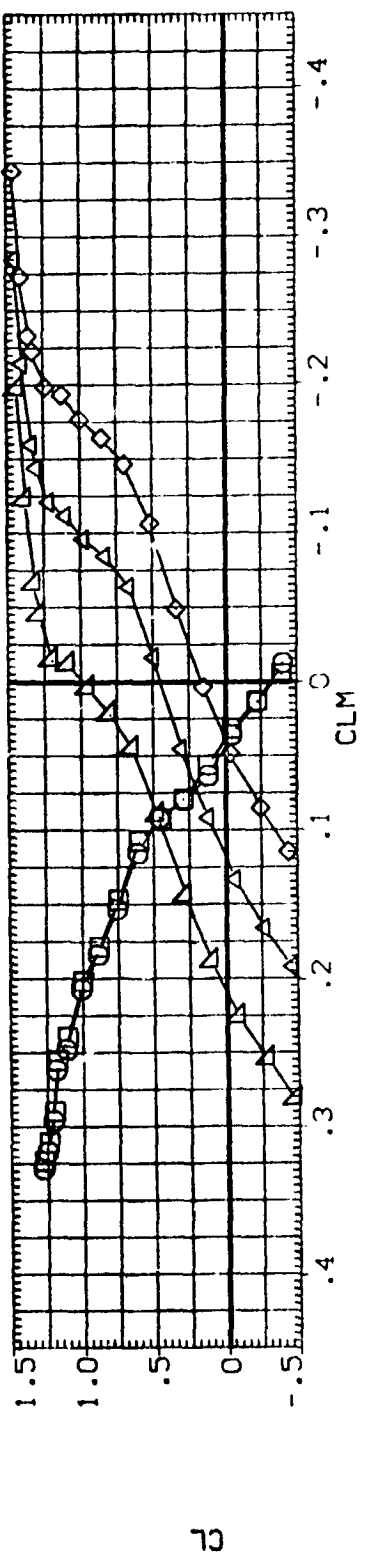
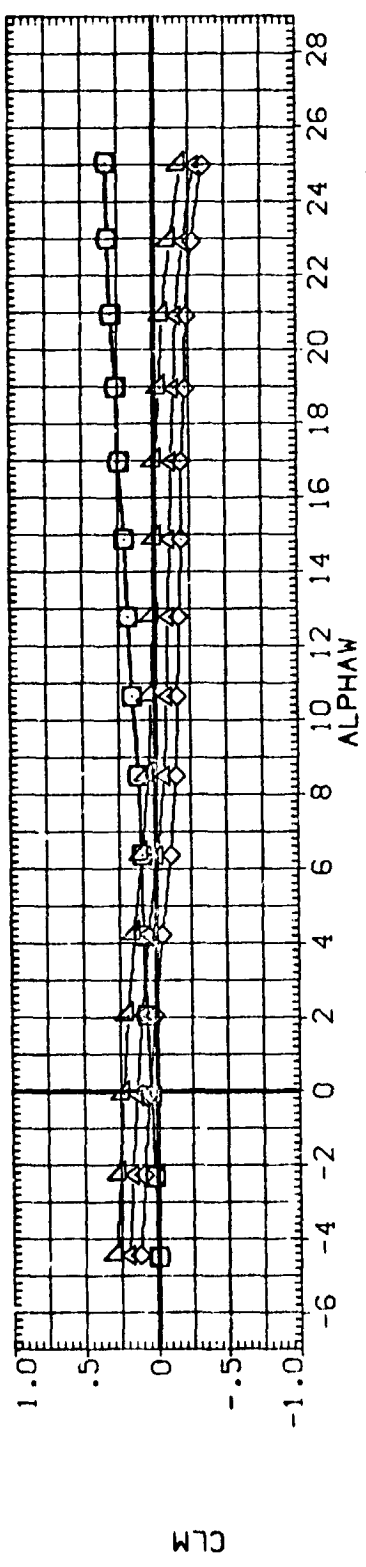
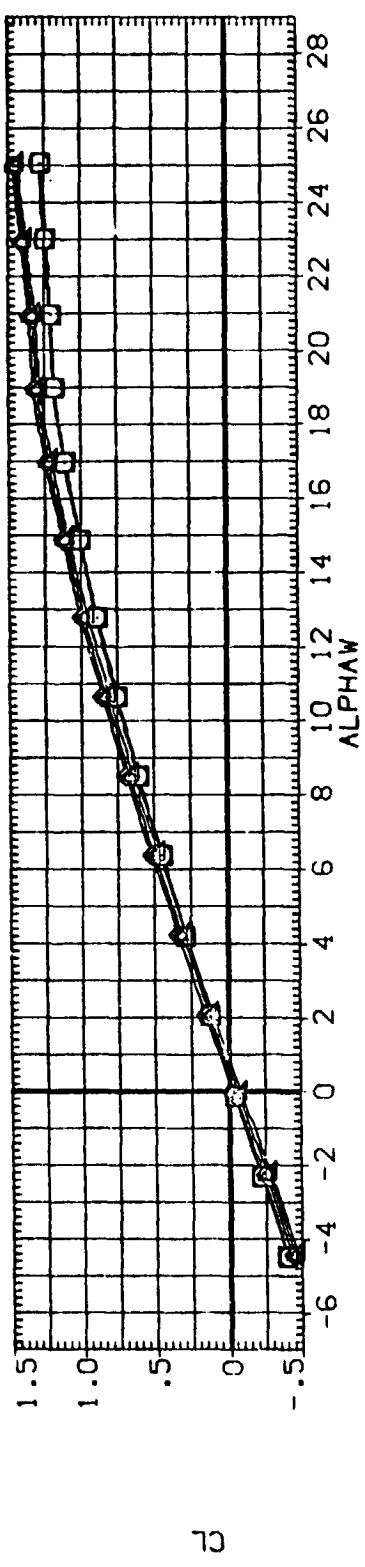


FIG.13 STABILIZER EFFECTIVENESS, CONF. 5, RUDDER=0.0

(A)Q = 36.03

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-18	ELV-08	REFERENCE INFORMATION
(RG0121)	CA11UWAL1146(EXT)K1	.000				SREF 5500.0000 SQ.FT.
(RG0048)	CA11UWAL1146(EXT)K1	.000				LREF 327.7800 IN.
(RG0110)	CA11UWAL1146(EXT)K1H15.6V9.1C1V11	.000	.000	.000	.000	BREF 2348.0000 IN. YC
(RG0099)	CA11UWAL1146(EXT)K1H15.6V9.1C1V11	.000	-1.960	.000	.000	XHRP 1339.5100 IN. YC
(RG0111)	CA11UWAL1146(EXT)K1H15.6V9.1C1V11	.000	-4.000	.000	.000	ZHRP 190.7500 IN. ZC
						SCALE .0400



FIG.13 STABILIZER EFFECTIVENESS, CONF. 5, RUDDER=0.0

(A)G = 36.03

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0121)	CALLUWAL1146(EXT)K1 V9.1C1 AT86AT87 T28.1	.000	-1.960	.000	.000	SREF 5500.0000 SQ.FT.
(RG0059)	CALLUWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000	-1.980	17.000	17.000	LREF 327.7800 IN.
(RG0108)	CALLUWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000	-1.970	-23.000	-23.000	BREF 2348.0000 IN.
(RG0109)	CALLUWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000				XHRP 1339.9100 IN. XC
						ZHRP .0000 IN. ZC
						SCALE 190.7500 IN. ZC
						SCALE .0400

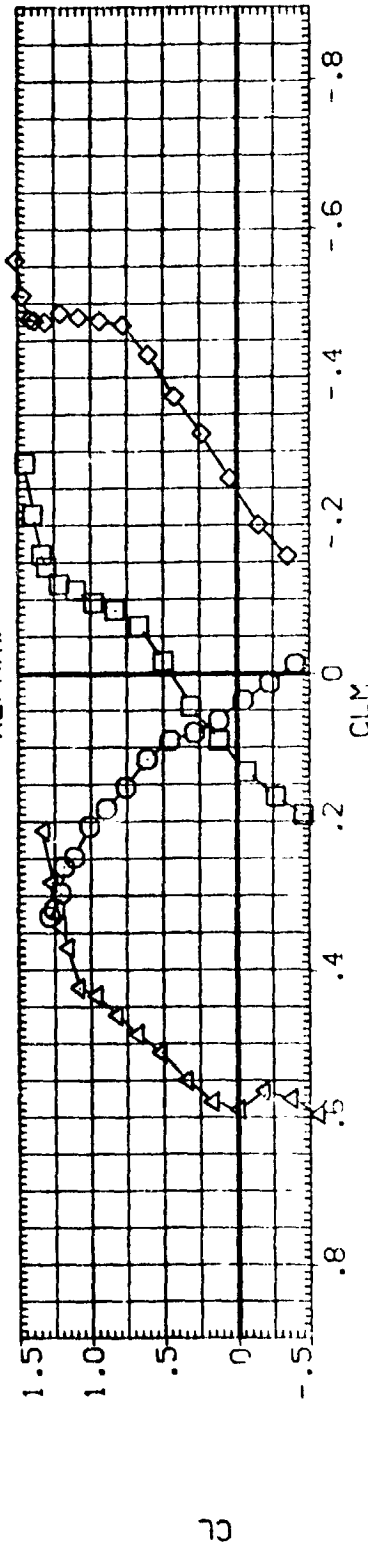
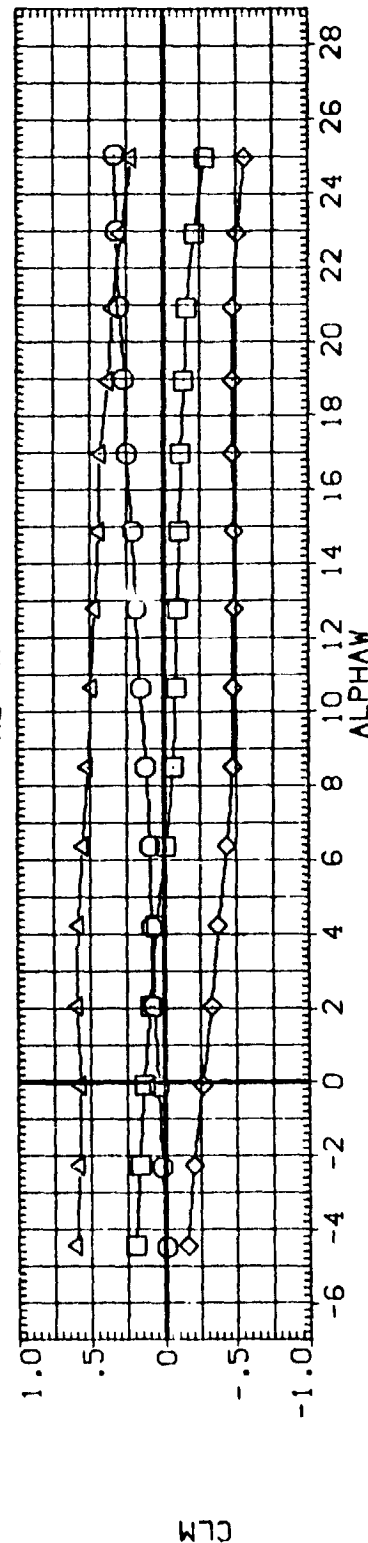
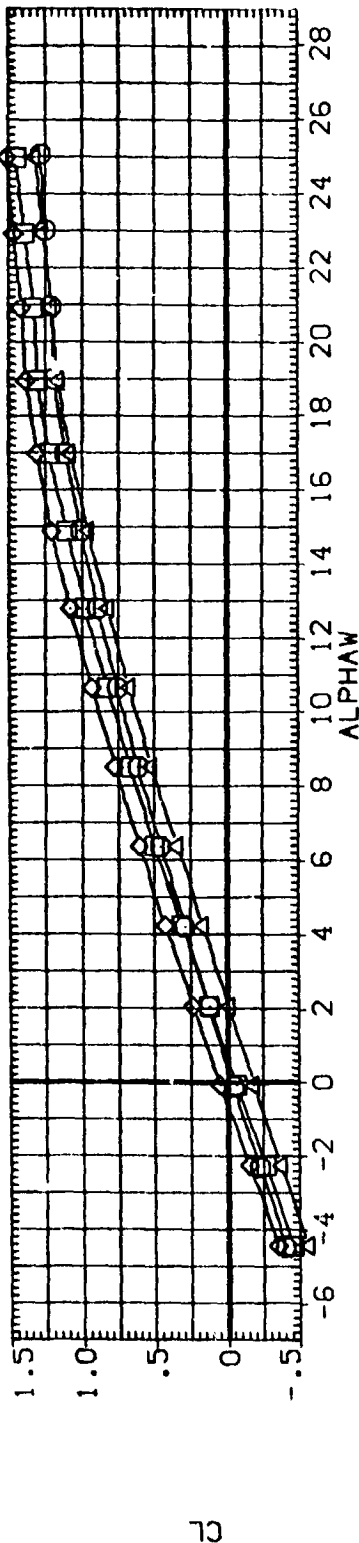


FIG.14 ELEVATOR EFFECTIVENESS, CONF. 5, RUDDER=0.0

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(RG0121)	□	CA11UWAL1146(EXT)K1 V9.1C1 AT86AT87 T28.1	.000	-1.953	.000	.000	SREF 5500.0000 SQ.Ft. IN.
(RG0099)	○	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000	-1.980	17.000	17.000	LREF 327.7800 IN.
(RG0108)	△	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000	-1.970	-23.000	-23.000	BREF 2348.0000 IN.
(RG0109)	◇	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	.000				XMRP 1339.9100 IN. YC
							ZMRP .0000 IN. ZC
							SCALE 190.7500 IN. .0400

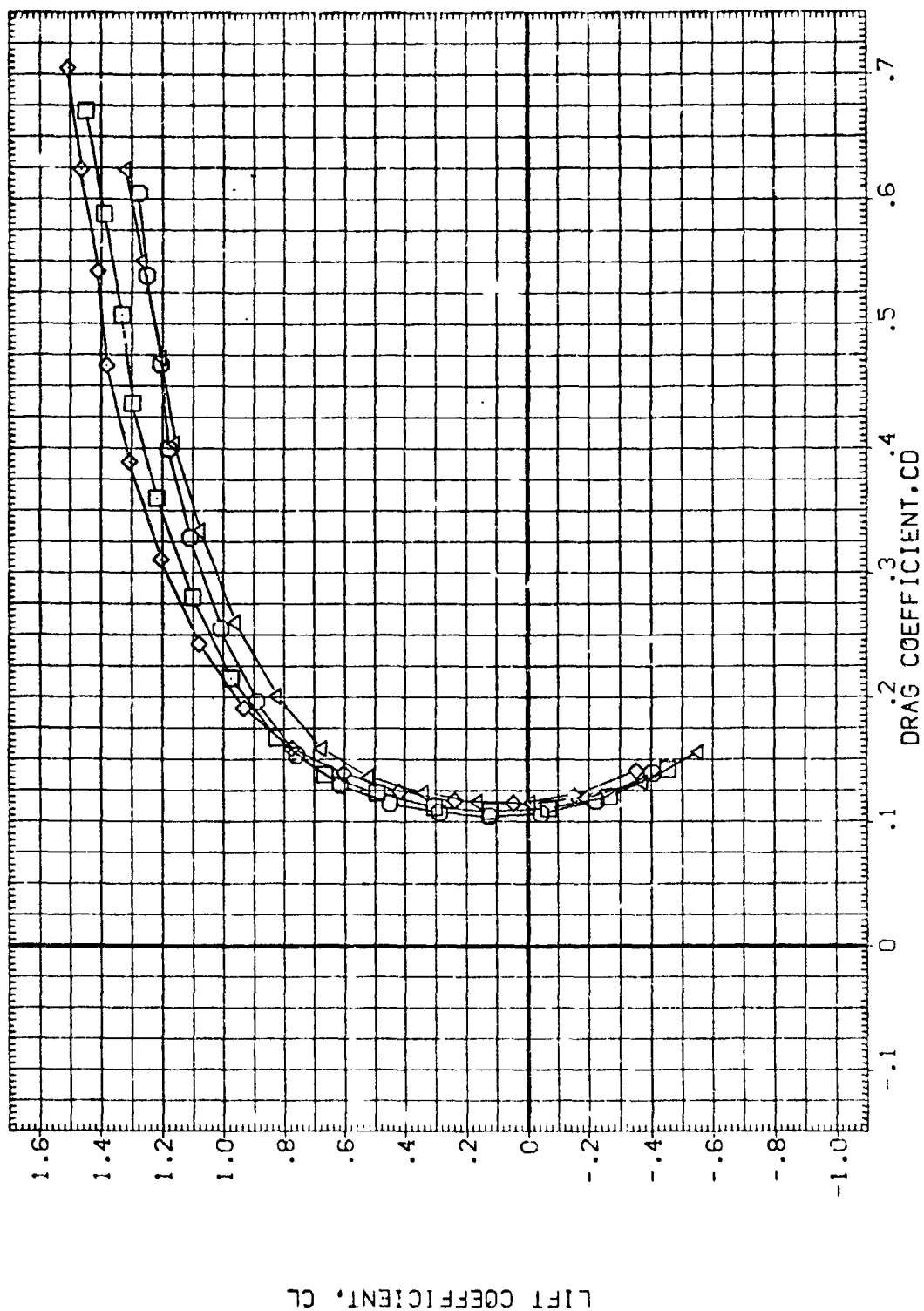


FIG.14 ELEVATOR EFFECTIVENESS, CONF. 5, RUDDER=0.0

(A)G = 36.03

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-18	ELV-08	REFERENCE INFORMATION
(RG0049)	CALLUVAL1146(EXT)K1	.000	-1.920	.000	.000	SREF 5500.0000 SQ.FT.
(RG0055)	CALLUVAL1146(EXT)K1H15.6VS.1CIV11	.000				LREF 327.7800 IN.
						SREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

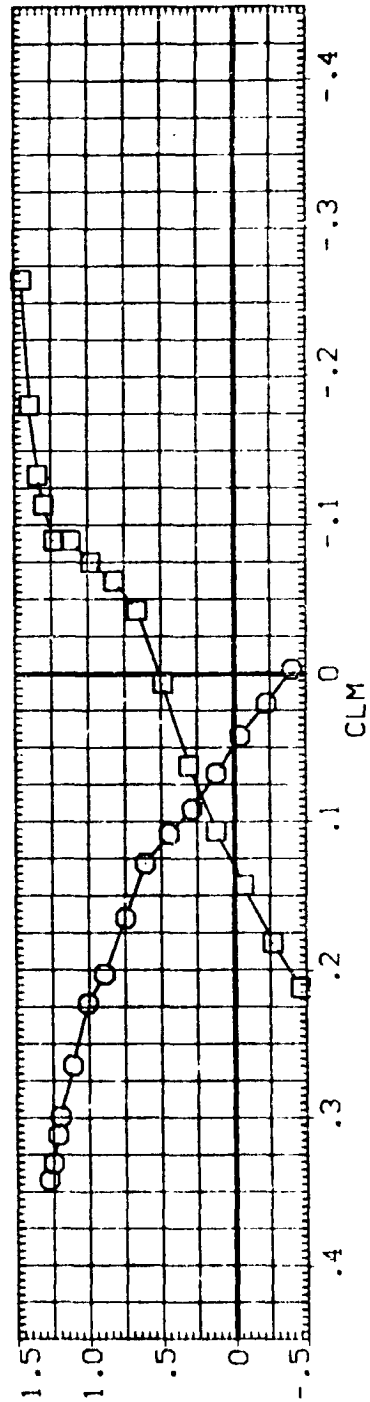
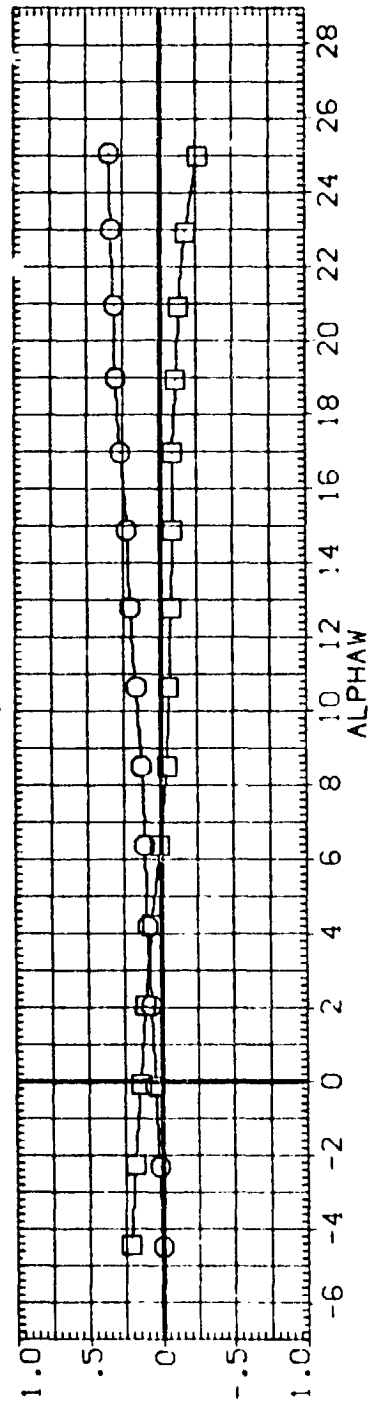
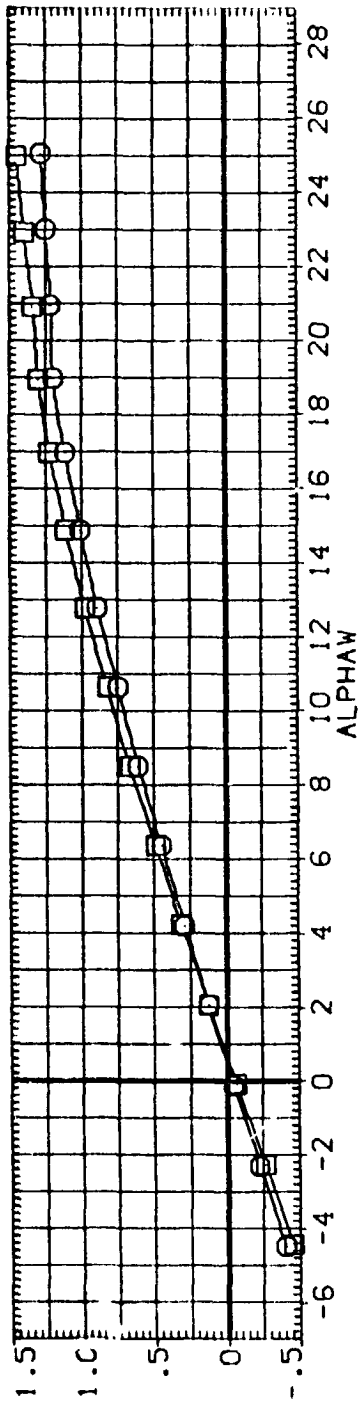


FIG.15 EFFECT OF STABILIZER, CONF. 5A, RUDDER=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-IB	ELV-OB	REFERENCE INFORMATION
(RG0049)	CALLUWAL1146(EXT)KI V9.1CI AT90AT91 128.1	.000	-1.920	.000	.000	SREF 5500.0000 SC.FT.
(RG0055)	CALLUWAL1146(EXT)KI15.6V9.1CI11 AT90AT91 128.1	.000				LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .040C

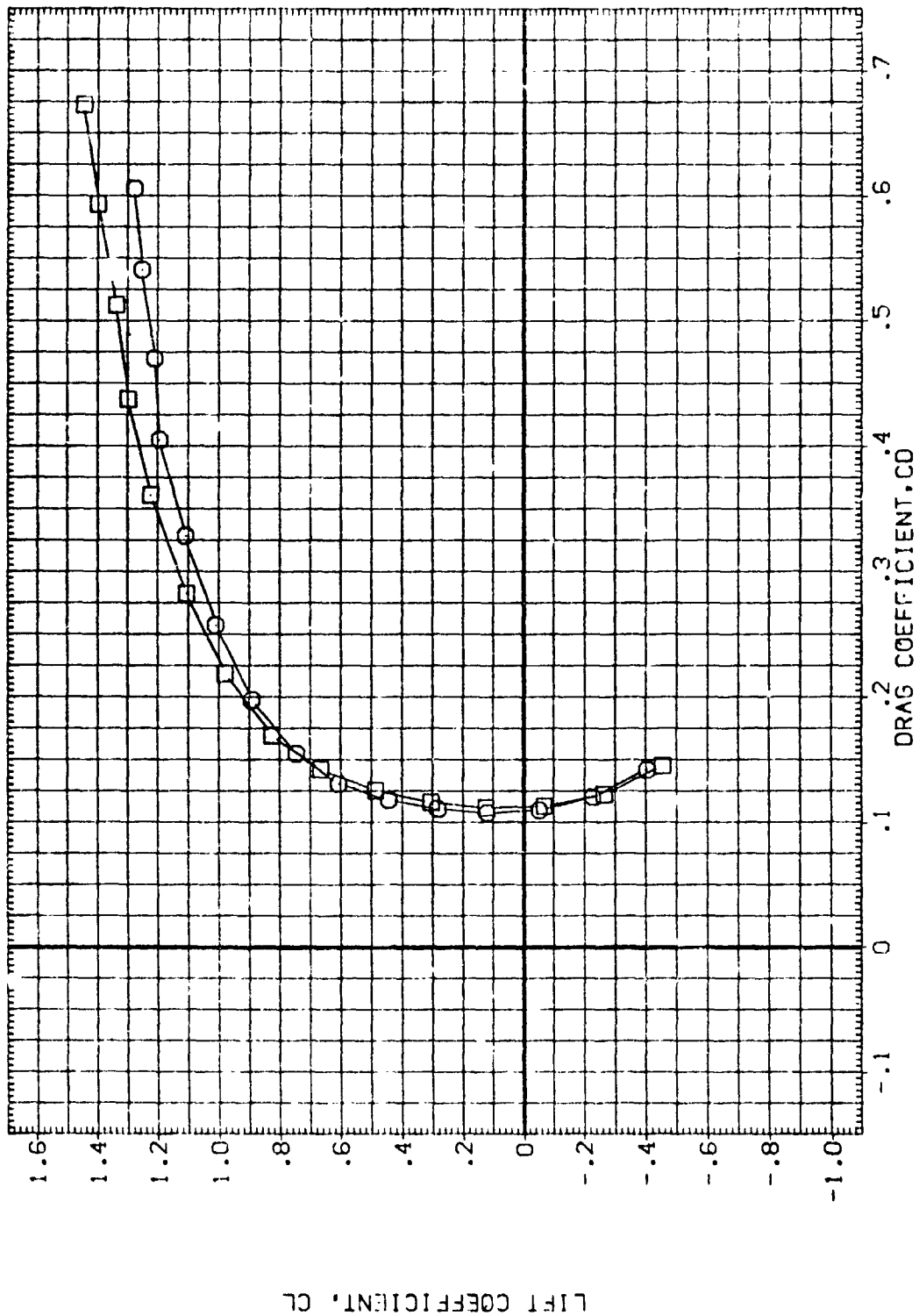


FIG.15 EFFECT OF STABILIZER, CONF. 5A, RUDDER=0.0

(A)3 = 36.03



DATA SET S.REFL CONFIGURATION DESCRIPTION  
 (RG0004) ☐ CALLUWAL1146(EXT)K1H1S.1V9.1  
 (RG0016) ☐ CALLUWAL1146(EXT)K1H1S.1

REFERENCE INFORMATION  
 SREF 5500.0000 SQ FT.  
 LREF 327.7800 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9.00 IN.  
 YMRP .0000 IN.  
 ZMRP 190.7500 IN.  
 SCALE .0400

ALPHAW 2.080  
 2.080  
 STAB -2.070  
 -1.870  
 RUD-U .000  
 RUD-L .000

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

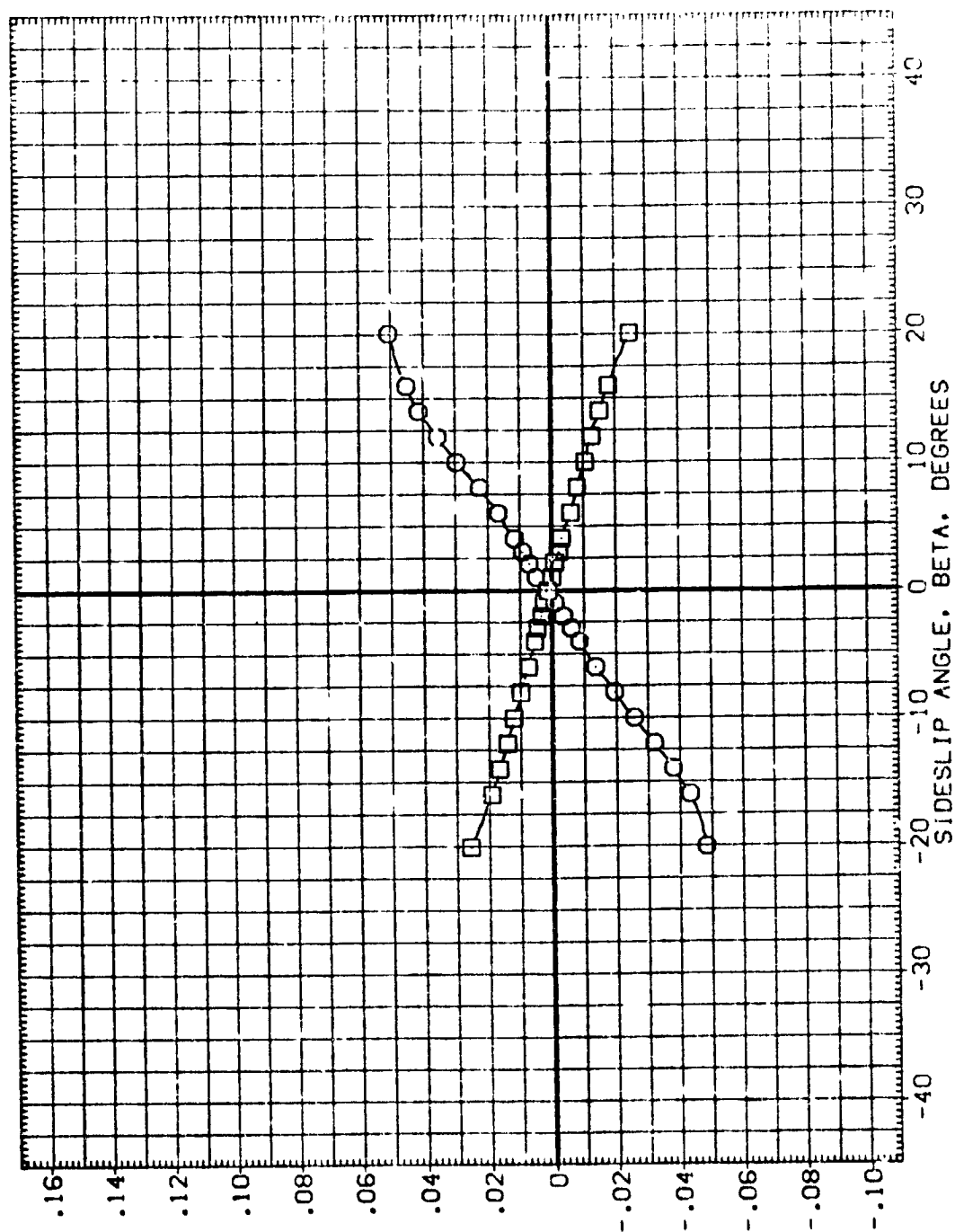


FIG.16 EFFECT OF VERTICAL FIN, 747 ALONE, ALPHA=2.08, ELEVATORS=0.0

(A)Q = 35.64

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAW	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(R60005)	CALLUWAL1146(EXT)KIH15.1V9.1	6.380	-2.070	.000	.000	SREF 5500.0000 SQ.FT.
(R60017)	CALLUWAL1146(EXT)KIH15.1	6.380	-1.870			LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XHRP 1339.9100 IN. XC
						YHRP .0000 IN. YC
						ZHRP 190.7500 IN. ZC
						SCALE .0400

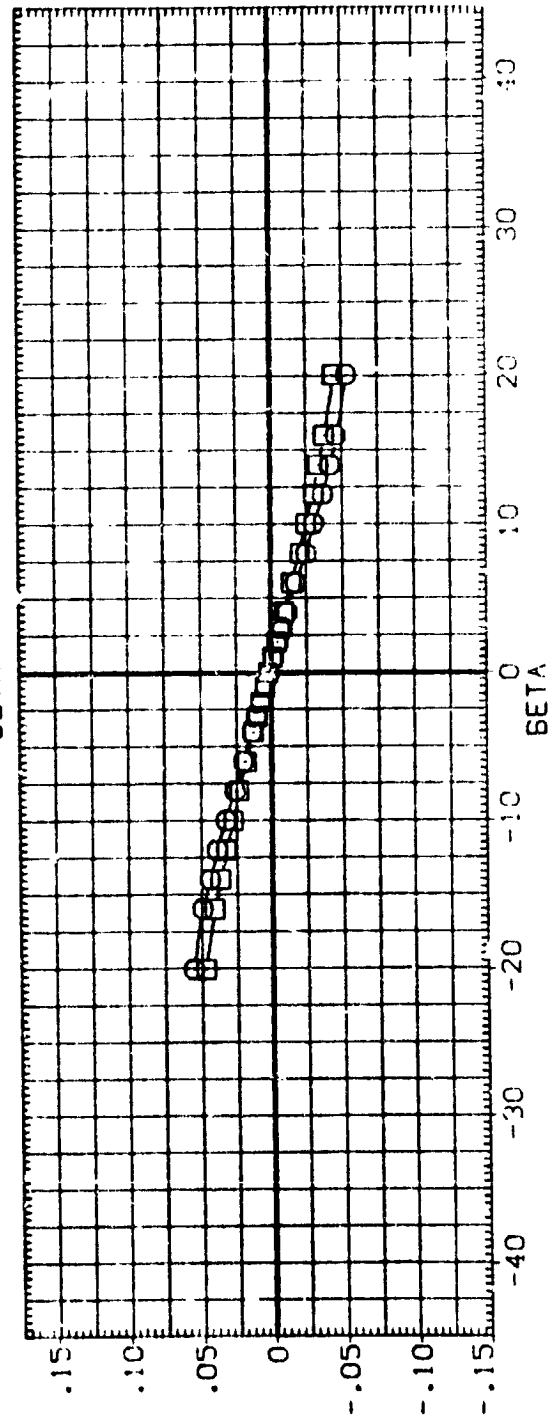
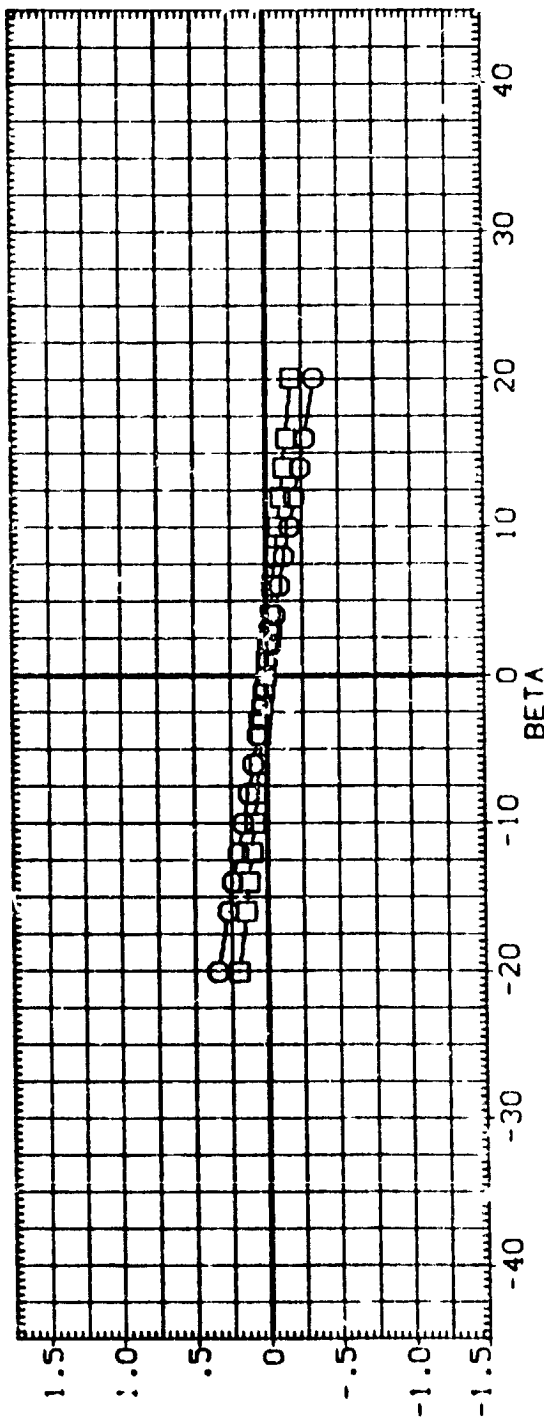


FIG.17 EFFECT OF VERTICAL FIN, 747 ALONE, ALPHAW=6.38, ELEVATORS=0.0

ALPHAB	SIAB	RUD-U	RUD-L	REFERENCE INFORMATION	SO.FT.
6.380	-2.070	.000		SREF	5500.0000
6.380	-1.870			UREF	327.7800
				GREF	2348.0000
				YHRP	1338.9100
				YHRP	.0000
				ZHRP	190.7500
				SCALE	.0400
					IN. XC
					IN. YC
					IN. ZC

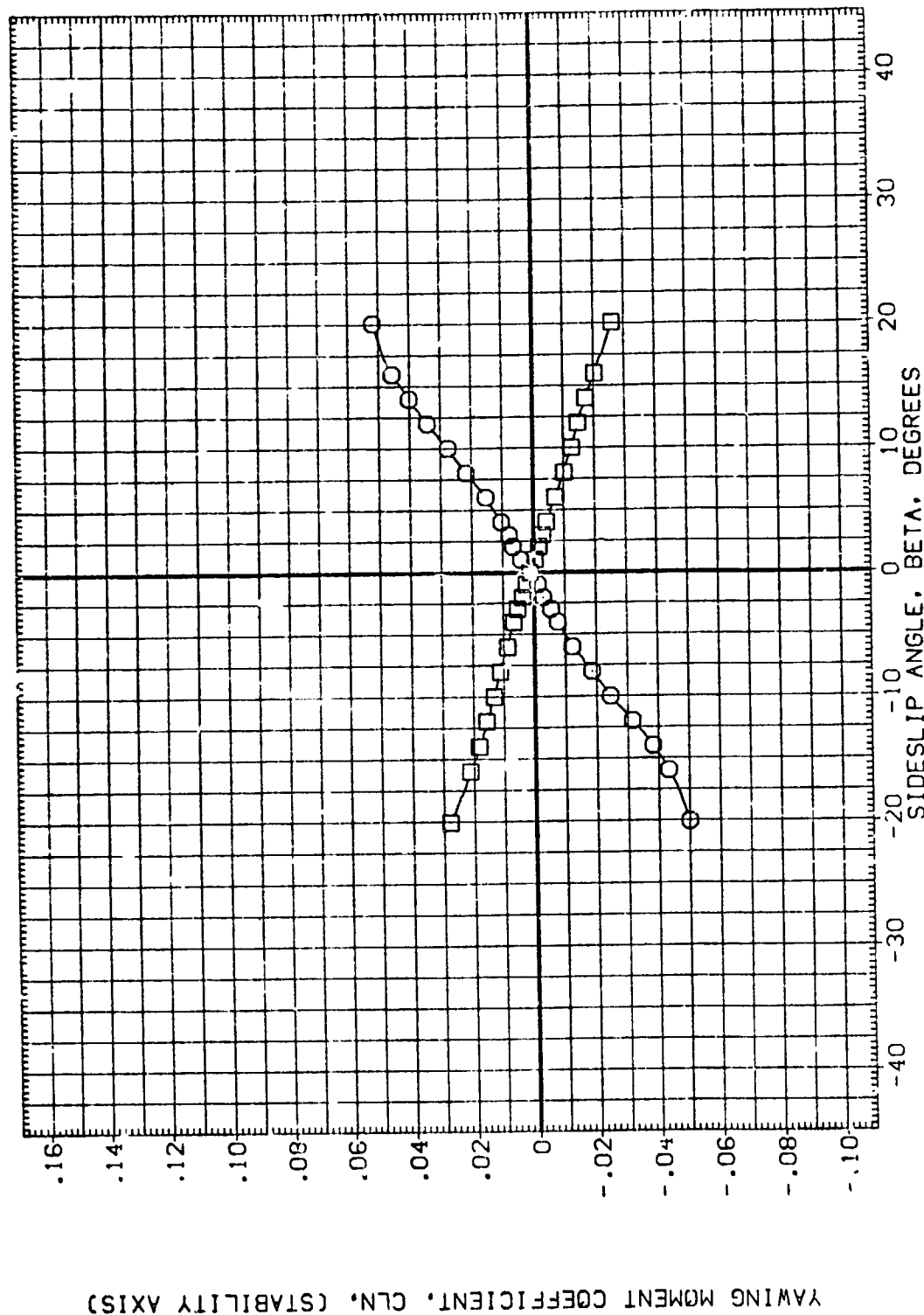


FIG.17 EFFECT OF VERTICAL FIN, 747 ALONE, ALPHA=6.38, ELEVATORS=0.0

DATA SE- SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUG-U	RUG-L	REFERENCE INFORMATION
(RG0006)	CALLUWAL1146(EXT)K1H15.1V9.1	12.790	-2.070	.000	.000	SREF 5500.0000 SQ.FT.
(RG0018)	CALLUWAL1146(EXT)K1H15.1	12.790	-1.870	.000	.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1338.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

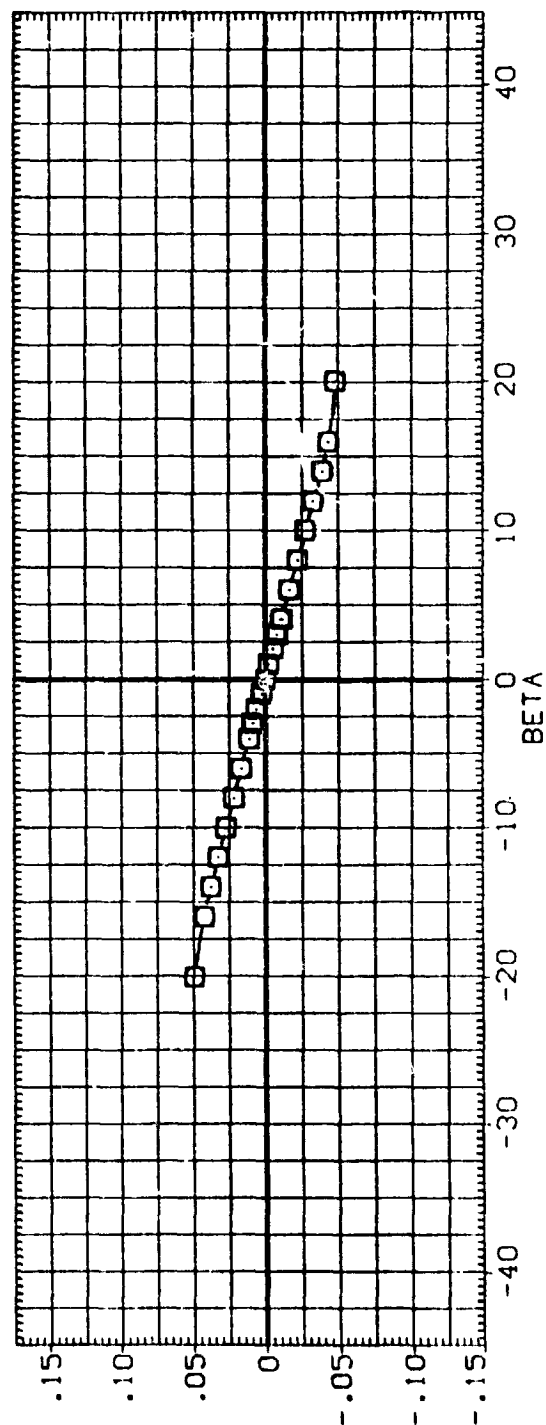
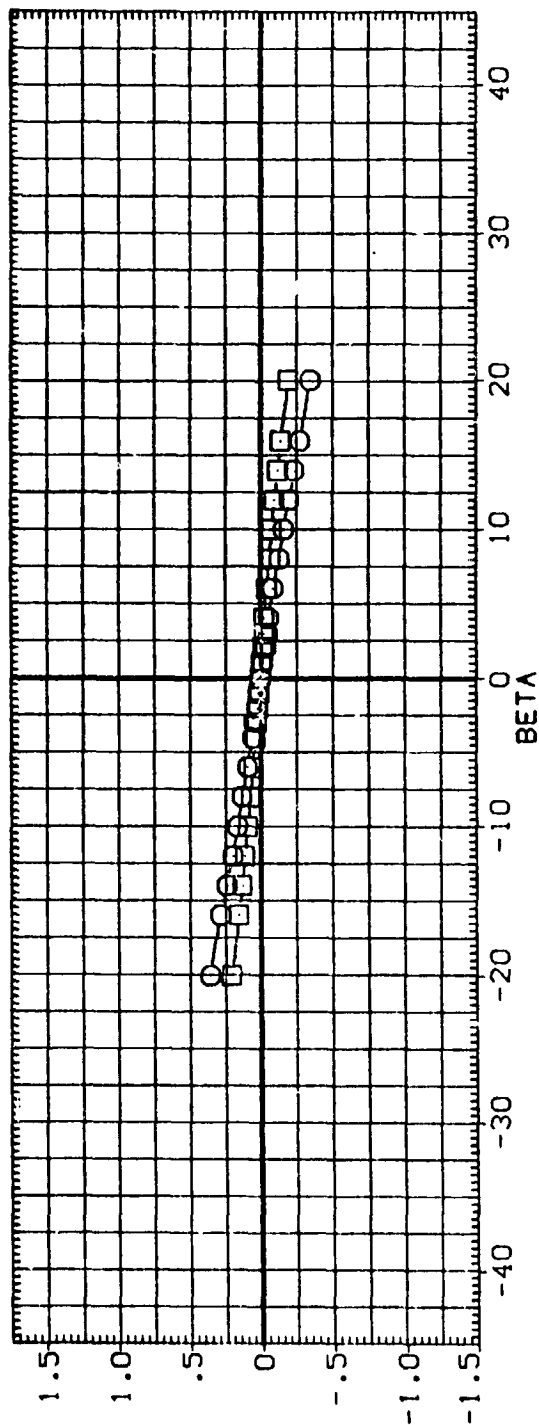


FIG.18 EFFECT OF VERTICAL FIN, 747 ALONE, ALPHA=12.79, ELEVATORS=0.0

(A)0 = 35.75

DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (RG0005)    CA11UWAL1146(EXT)KIH15.1V9.1  
 (RG0018)    CA11UWAL1146(EXT)KIH15.1

ALPHA    STAB    RUD-U    RUD-L  
 12.790    -2.070    .000    .000  
 12.790    -1.870

REFERENCE INFORMATION  
 SREF    5500.0000    SQ.FT.  
 LREF    327.7800    IN.  
 BREF    2348.COC3    IN.  
 XMRP    1339.9100    IN.    XC  
 YMRP    .0000    IN.    YC  
 ZMRP    190.7500    IN.    ZC  
 SCALE    .0400

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

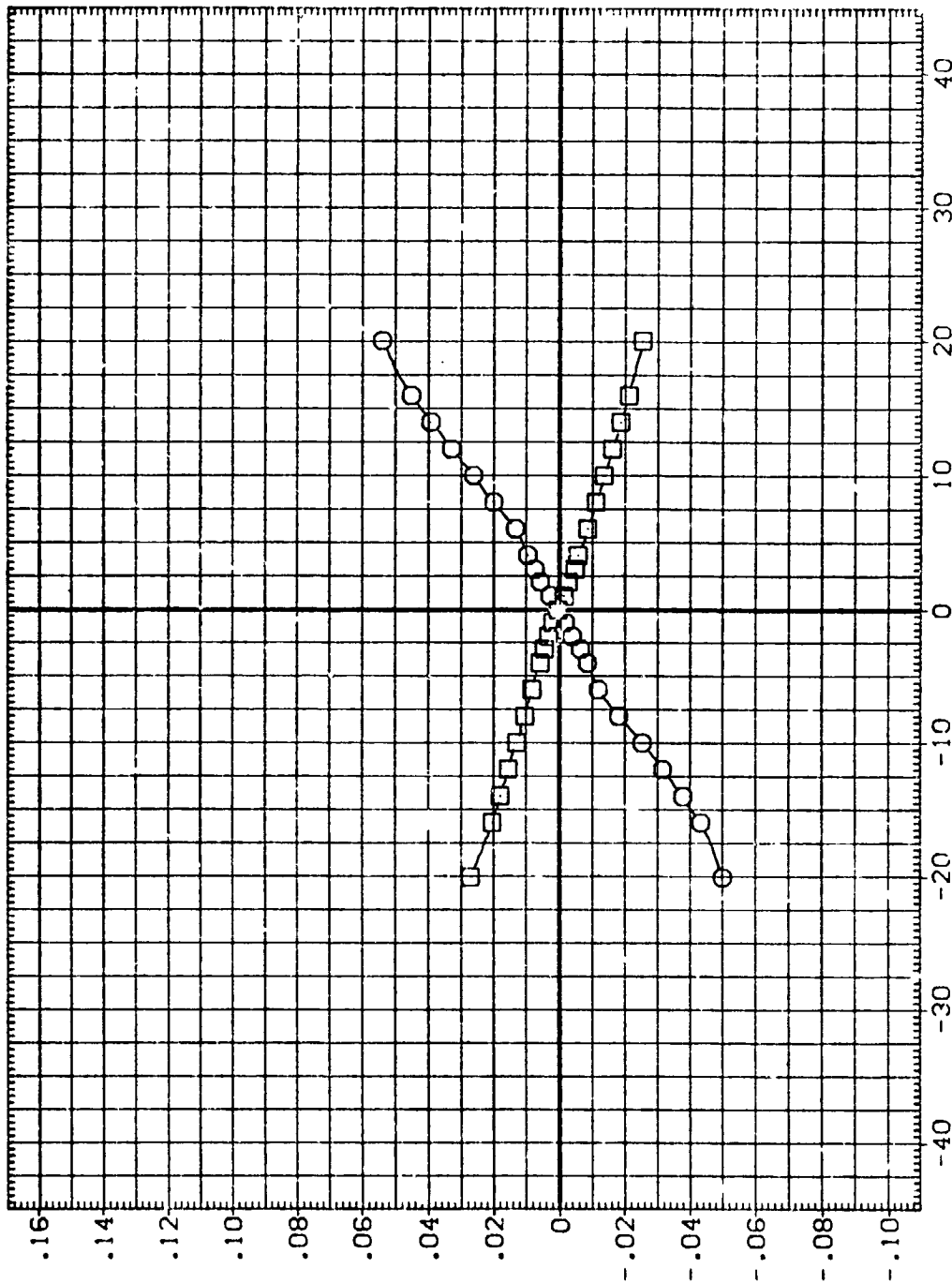


FIG.18 EFFECT OF VERTICAL FIN, 747 ALONE, ALPHA=12.79, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0005)	CA11UWAL1146(EXT)K1H15.1V9.1	6.380	-2.070	.000	.000	SREF 5500.0000 SQ.FT.
(RG0007)	CA11UWAL1146(EXT)K1H15.1V9.1	6.380	-2.070	25.000	.000	LREF 327.7800 IN.
(RG0008)	CA11UWAL1146(EXT)K1H15.1V9.1	6.380	-2.070	25.000	25.000	BREF 2348.0000 IN.
(RG0009)	CA11UWAL1146(EXT)K1H15.1V9.1	6.380	-2.070	.000	25.000	XMRP 1339.9100 IN.
						YMRP .0300 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

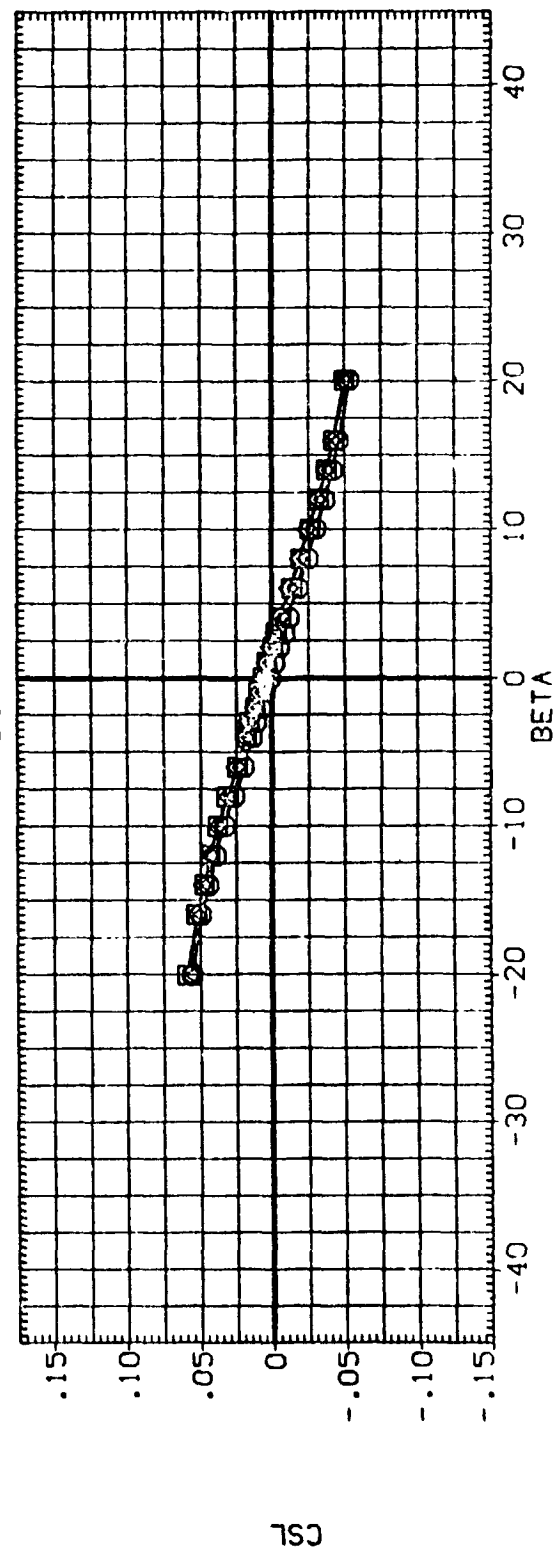
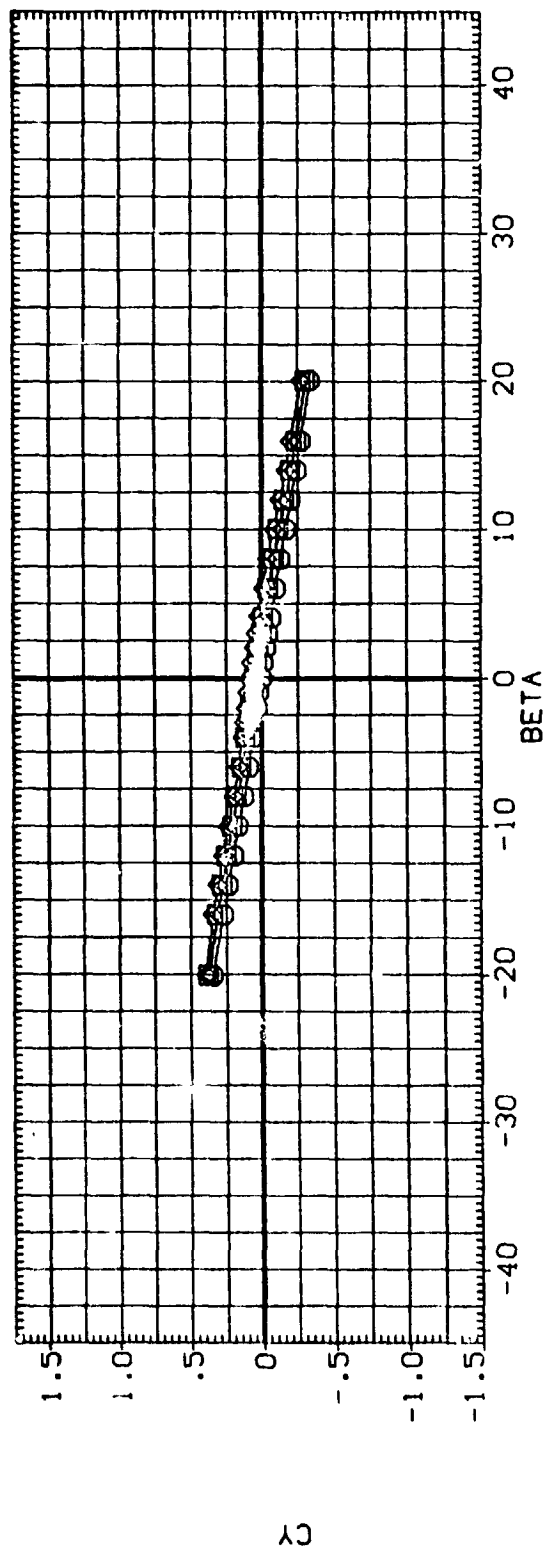


FIG.19 RUDDER EFFECTIVENESS, 747 ALONE, ALPHA=6.38, ELEVATORS=0.0

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0005)		CA11UWAL1146(EXT)K1H1S.1V9.1	6.380	-2.070	.000	.000	SREF 5500.0000
(RG0007)		CA11UWAL1146(EXT)K1H1S.1V9.1	6.380	-2.070	.000	.000	LREF 327.7800
(RG0008)		CA11UWAL1146(EXT)K1H1S.1V9.1	6.380	-2.070	.000	.000	BREF 2348.0000
(RG0009)		CA11UWAL1146(EXT)K1H1S.1V9.1	6.380	-2.070	.000	.000	XMRP 1339.9100
							YMRP .0000
							ZMRP 190.7500
							SCALE .0400

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

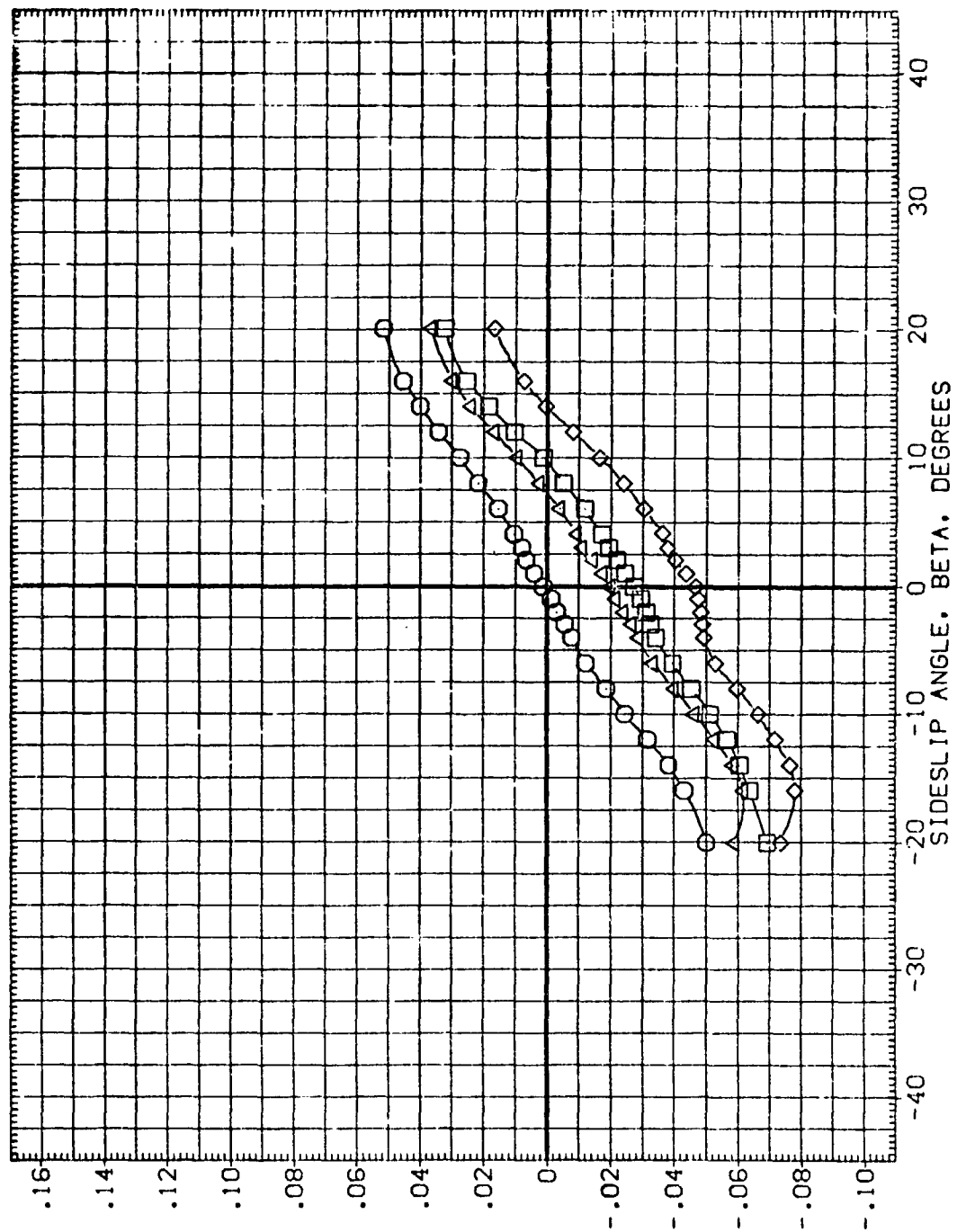


FIG.19 RUDDER EFFECTIVENESS, 747 ALONE, ALPHA=6.38, ELEVATOR=0.0

(A) = 35.64

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0005)	CA11UWAL1146(EXT)KIH15.1V9.1	6.380	-2.070	.000	.000	SREF 5500.0000 50.FT.
(RG0026)	CA11UWAL1146(EXT)KIH15.6V9.4	6.380	-1.880	.000	.000	LREF 327.7800 IN.
(RG0029)	CA11UWAL1146(EXT)KIH15.6V9.4	6.380	-1.880	.000	.000	BREF 2348.0000 IN.
(RG0061)	CA11UWAL1146(EXT)KIH15.6V9.4	6.380	-1.920	.000	.000	XMRP 1339.9100 IN. XC
(RG0041)	CA11UWAL1146(EXT)KIH15.6V9.4	6.380	-1.970	.000	.000	YMRP .0000 IN. YC
(RG0054)	CA11UWAL1146(EXT)KIH15.6V9.4	6.380	-1.920	.000	.000	ZMRP 190.7500 IN. ZC
						SCALE .0400

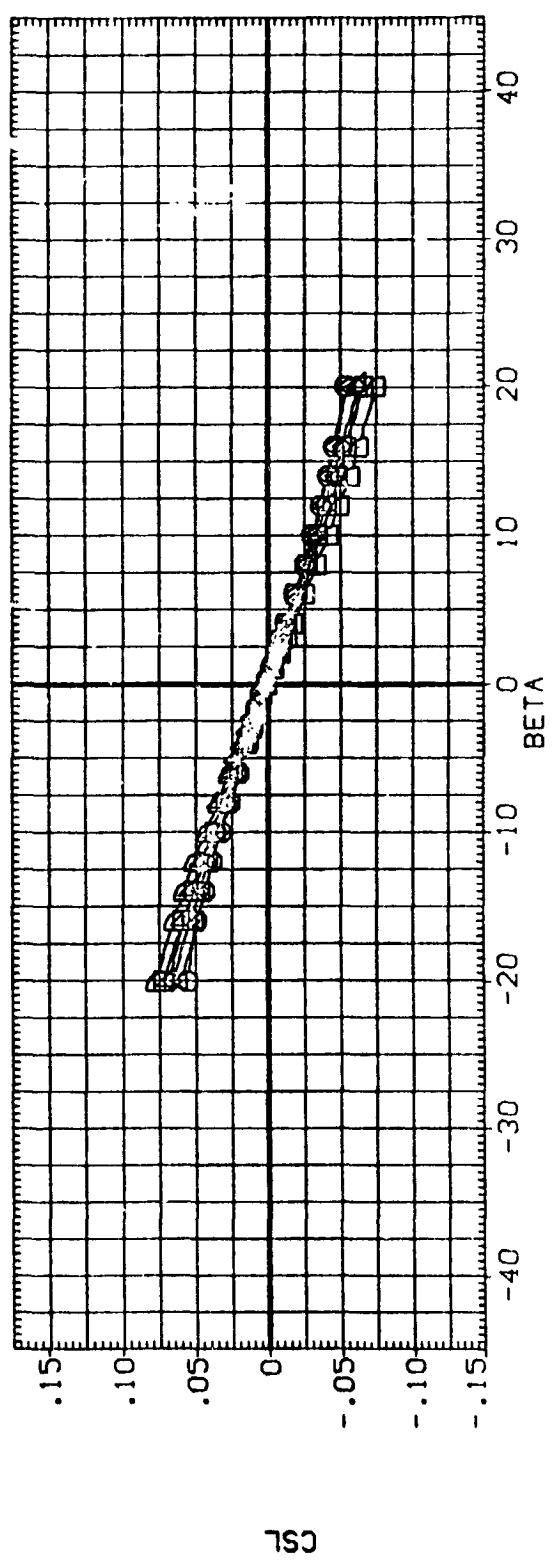
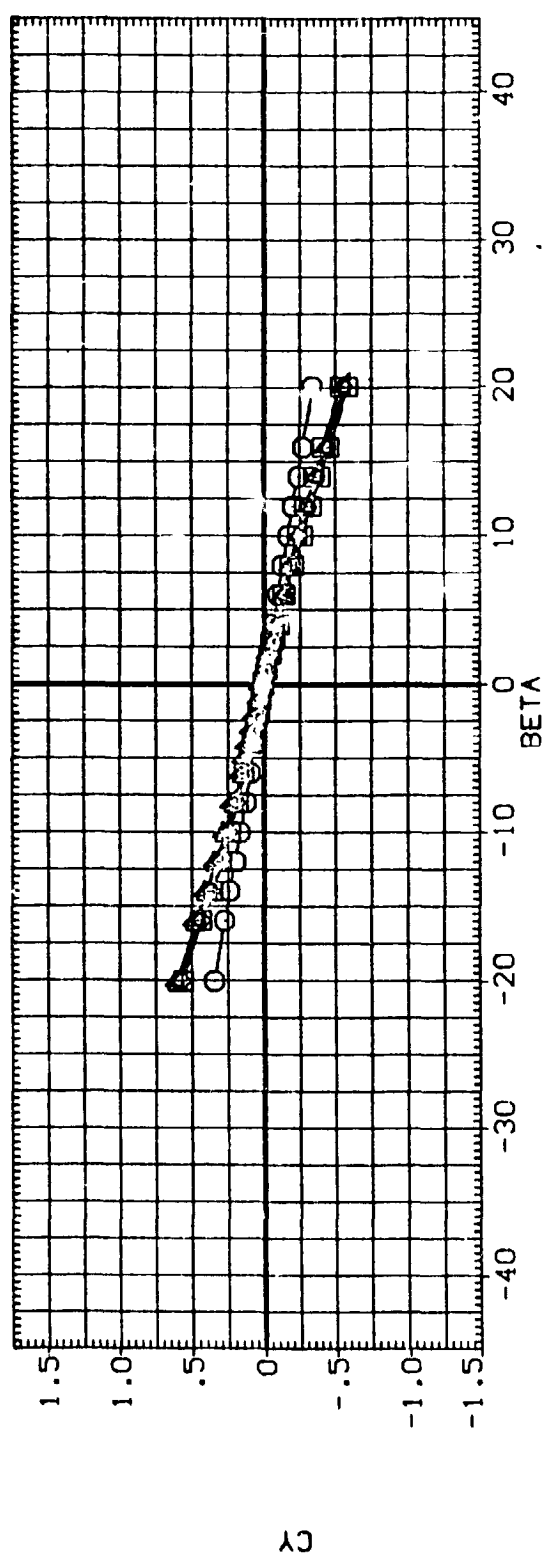


FIG.20 LAT.-DIRECT. CHARAC. OF STUDY CONFIGS.1,1A,3A,5,5A, ALPHA=6.38,ELEV.=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(R60005)	CA11UWAL1146(EXT)JKIH15.1V9.1	6.380	-2.070	.000	.000	SREF 5500.0000 SQ.FT.
(R60026)	CA11UWAL1146(EXT)JKIH15.6V9.4	6.380	-1.880	.000	.000	LREF 327.7800 IN.
(R60029)	CA11UWAL1146(EXT)JKIH15.6V9.4	6.380	-1.880	.000	.000	BREF 2348.0000 IN.
(R60061)	CA11UWAL1146(EXT)JKIH15.6V9.4	6.380	-1.970	.000	.000	XMRP 1339.9100 IN.
(R60041)	CA11UWAL1146(EXT)JKIH15.6V9.4	6.380	-1.970	.000	.000	YMRP 190.7500 IN.
(R60054)	CA11UWAL1146(EXT)JKIH15.6V9.4	6.380	-1.970	.000	.000	ZMRP 190.7500 IN.
						SCALE .0400

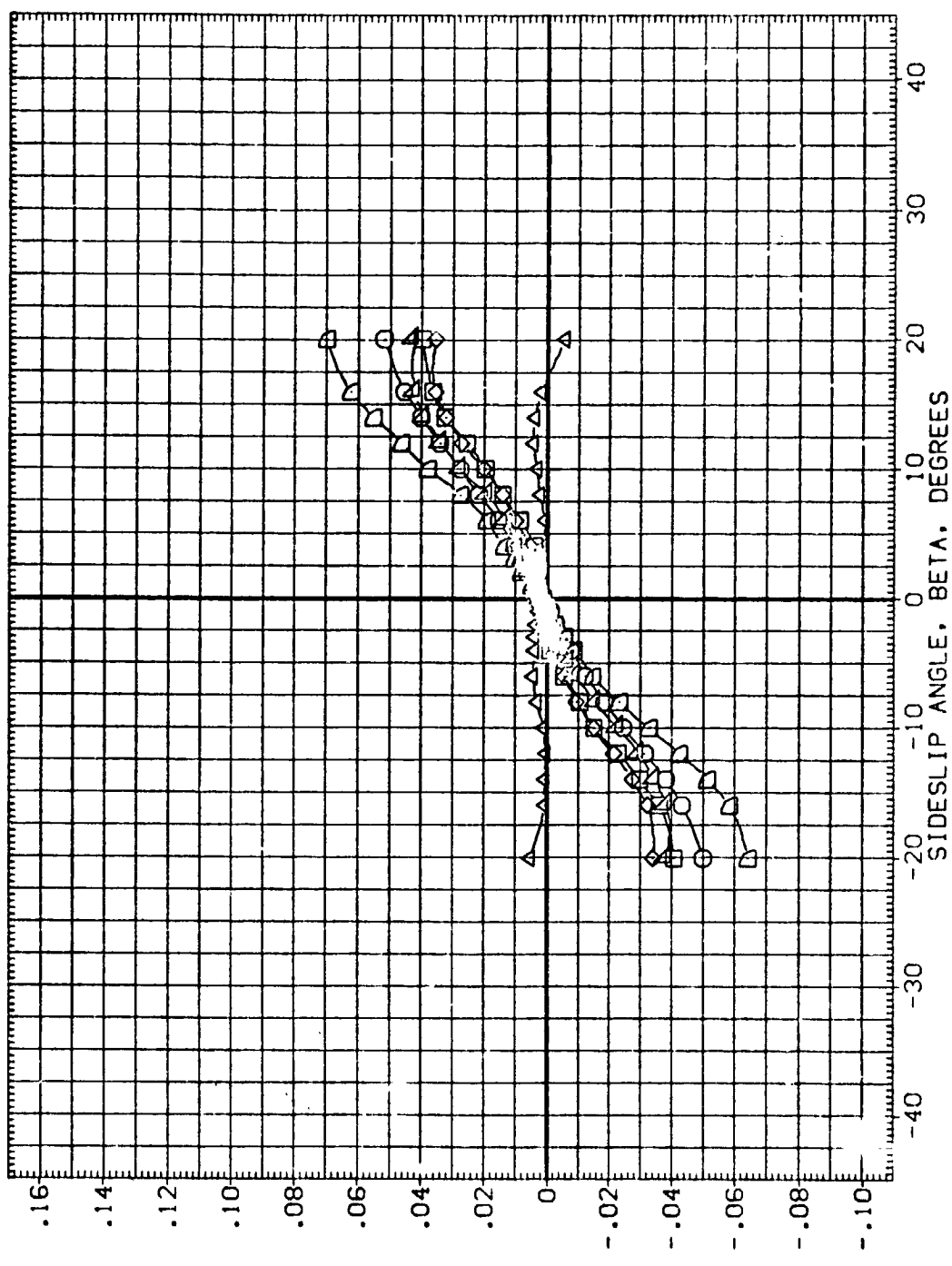


FIG.20 LAT.-DIRECT. CHARAC. OF STUDY CONFIGS.1,1A,3A,5,5A, ALPHA=6.38,ELEV.=0.0  
 (A)0 = 35.64 PAGE 34

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	AT38AT37	T28	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0019)		CA11UVAL1146(EXT)K1H15.1	AT38AT37	T28	6.380	-1.900	.000	.000	SREF 5500.0000 SQ.FT.
(RG0020)		CA11UVAL1146(EXT)K1H15.1V9.1	AT38AT37	T28	6.380	-1.500	.000	.000	LREF 327.7800 IN.
(RG0021)		CA11UVAL1146(EXT)K1H15.6V9.1	AT38AT37	T28	6.380	-1.880	.000	.000	BREF 2348.0000 IN.
(RG0022)		CA11UVAL1146(EXT)K1H15.6V9.4	AT38AT37	T28	6.380	-1.880	.000	.000	XMRP 1339.9100 IN.
									YMRP .0000 IN.
									ZMRP 190.7500 IN.
									SCALE .0400

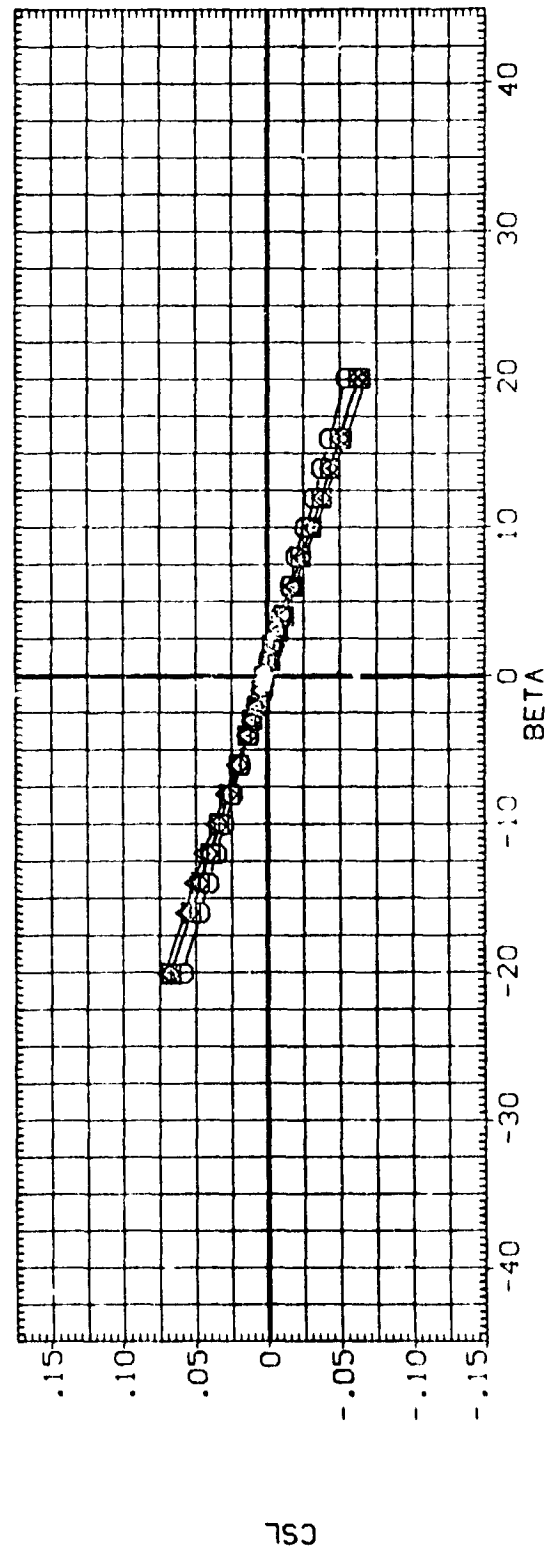
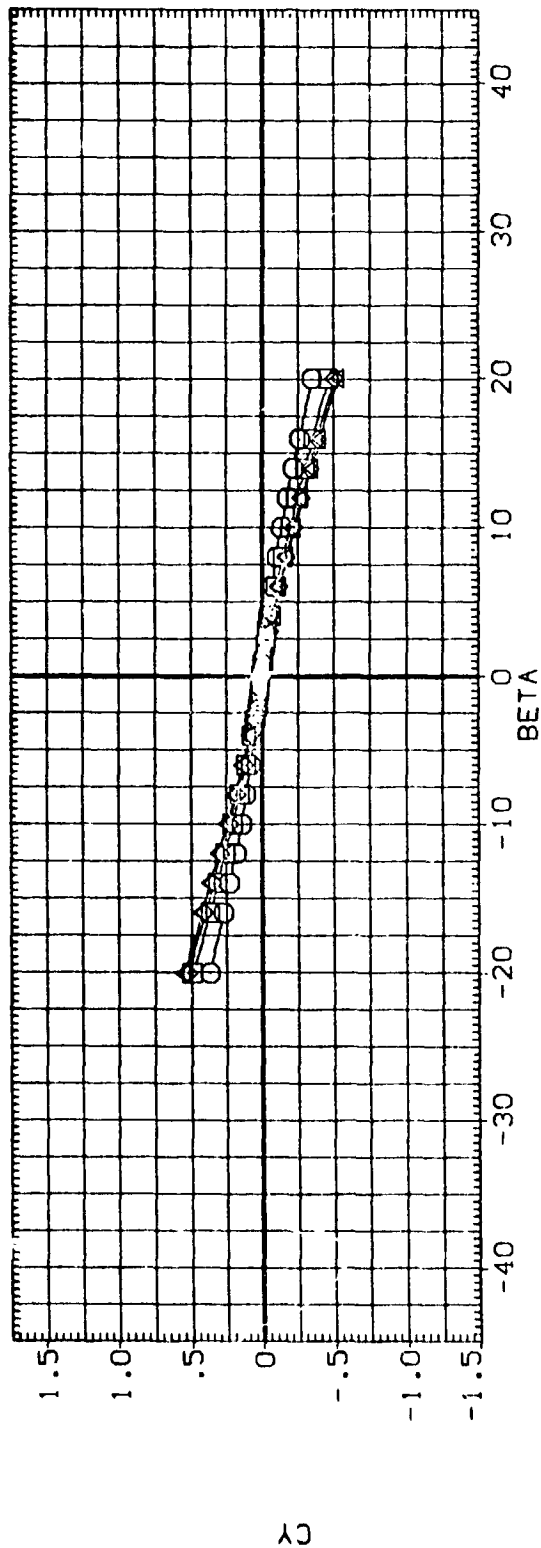


FIG.21 EFFECTS OF 747 VERTICAL FINS, CA3 TEST CONF., ALPHA=6.38, ELEVATORS=0.0

(A)C = 36.10

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0019)	○	CALLUWAL1146(EXT)K1H15.1	6.380	-1.500	.000	.000	SREF 5500.0000 SC.FT.
(RG0020)	◇	CALLUWAL1146(EXT)K1H15.1V9.1	6.380	-1.500	.000	.000	LREF 327.2800 IN.
(RG0021)	△	CALLUWAL1146(EXT)K1H15.6V9.1	6.380	-1.880	.000	.000	BREF 2348.0000 IN.
(RG0022)	□	CALLUWAL1146(EXT)K1H15.6V9.4	6.380	-1.880	.000	.000	YMRP 1339.9100 IN.
							ZMRP .0000 IN.
							SCALE 190.7500 IN.

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

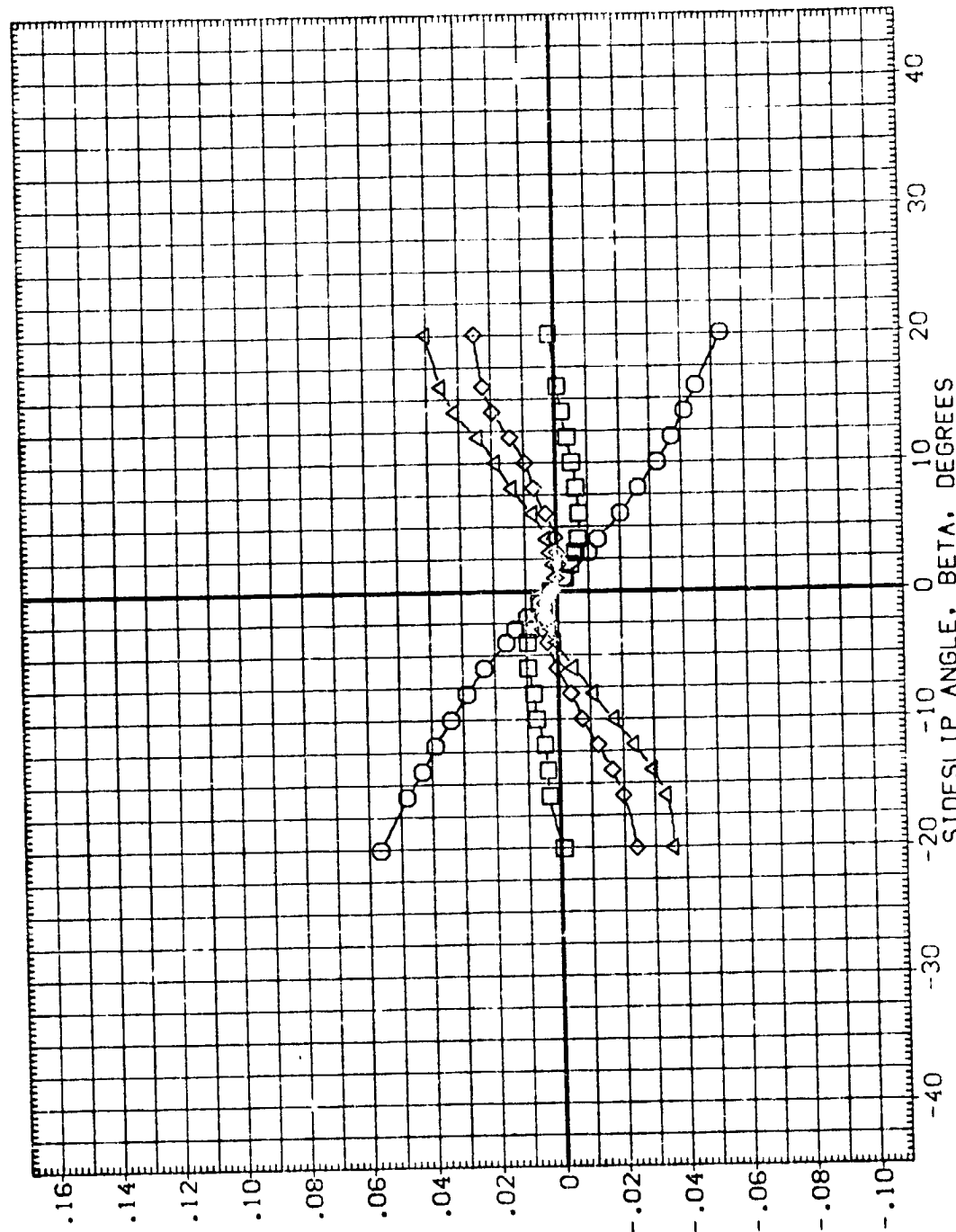


FIG.21 EFFECTS OF 747 VERTICAL FINS, CA3 TEST CONF., ALPHA=6.38, ELEVATORS=0.0  
(A)0 = 36.10

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0022)	CA11UWAL1146(EXT)K1M15.6V9.4	6.380	-1.880	.000	.000	SREF 5500.0000 50.FT.
(RG0023)	CA11UWAL1146(EXT)K1M15.6V9.4	6.380	-1.880	25.000	25.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.500 IN. ZC
						SCALE .0400

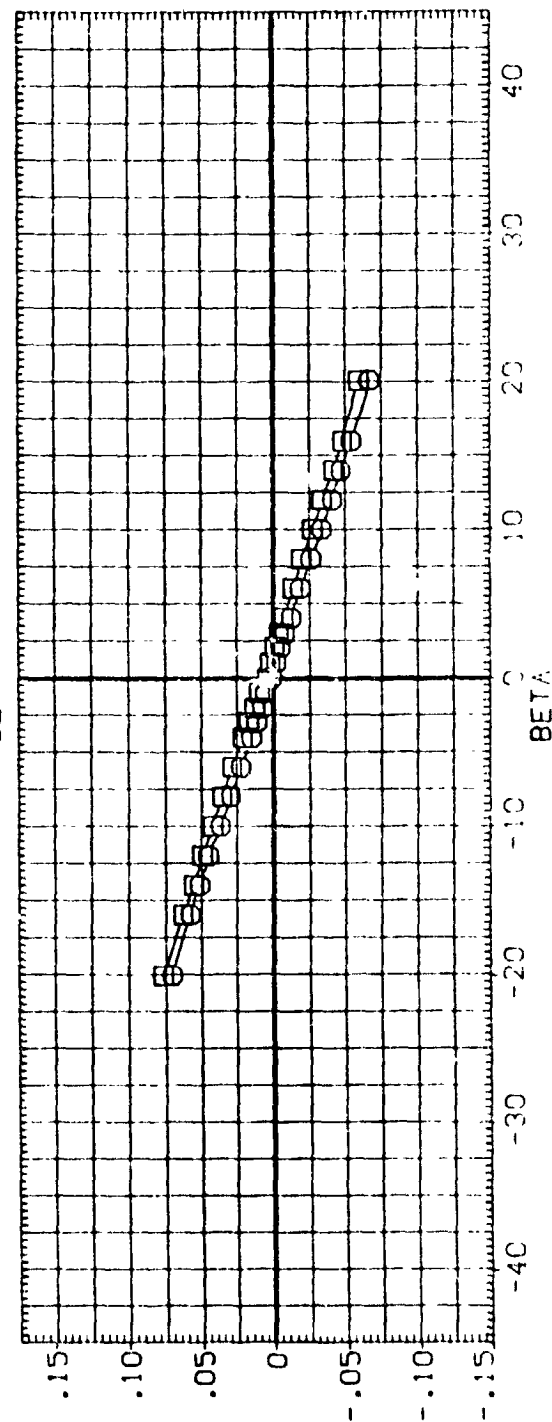
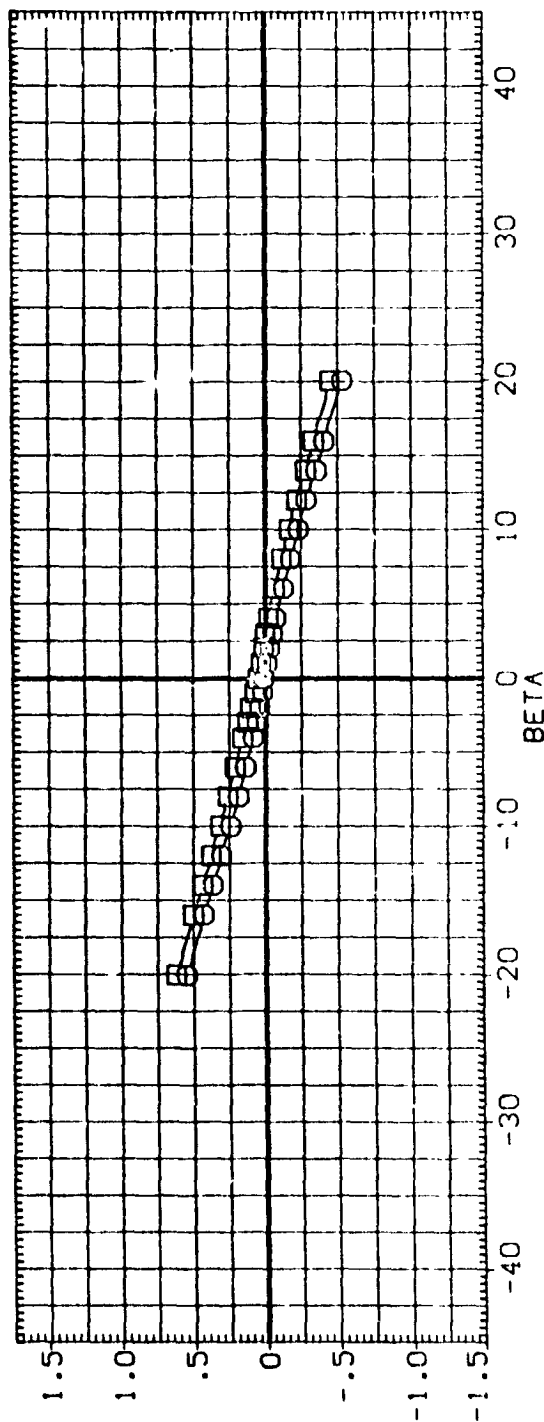


FIG.22 RUDDER EFFECTIVENESS, CA3 TEST CONF., ALPHA=6.38, ELEVATORS=0.0

(A)9 = 25.13

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0022)	CALLUWA1146(EXT)KIH15.6V9.4	6.380	-1.880	.000	.000	SREF 5500.0000 SQ.FT.
(RG0023)	CALLUWA1146(EXT)KIH15.6V9.4	6.380	-1.880	25.000	25.000	LREF 32.7800 IN.
						BREF 234.0000 IN.
						XMRP 1.739.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

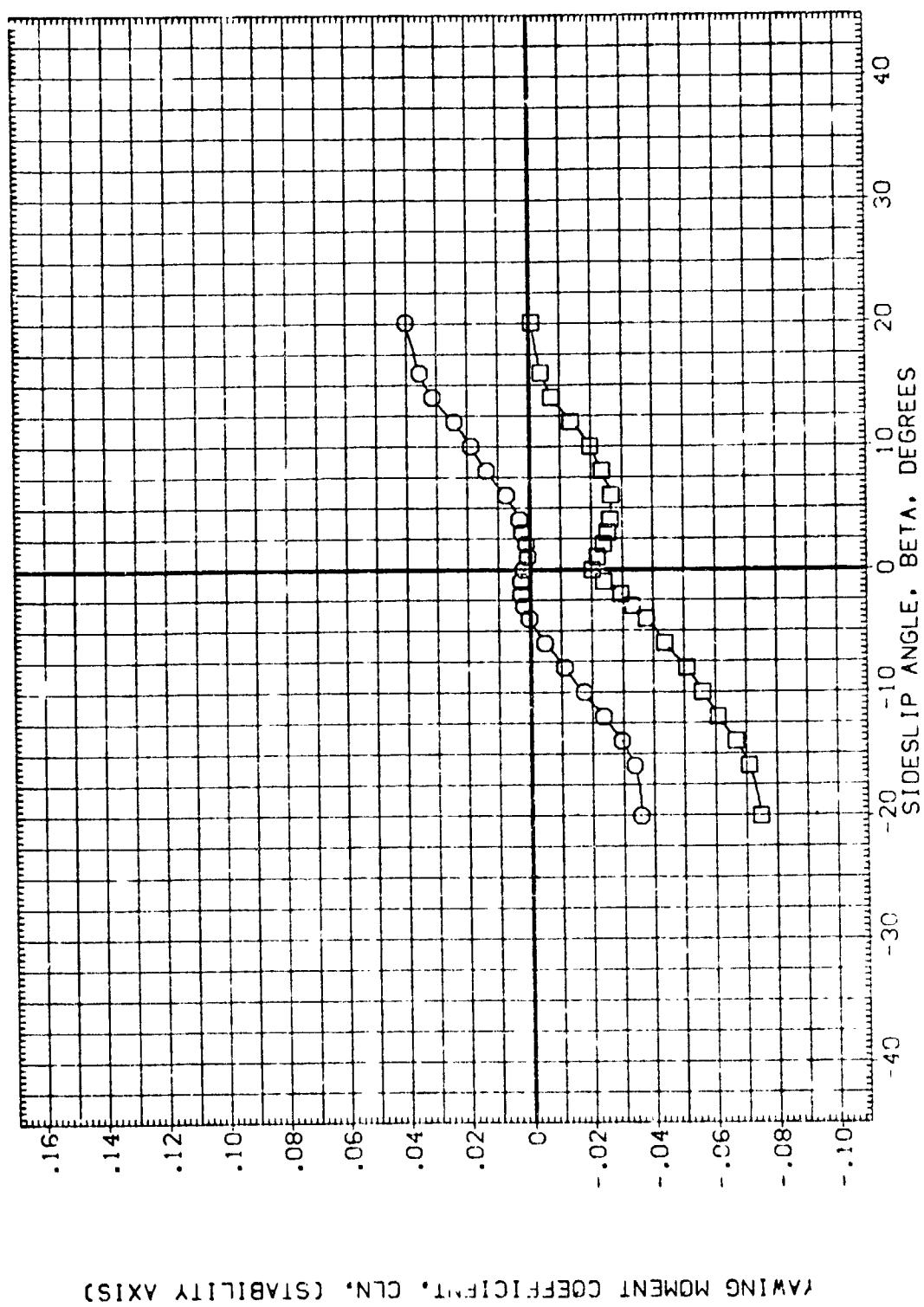


FIG.22 RUDDER EFFECTIVENESS, CA3 TEST CONF., ALPHA=6.38, ELEVATORS=0.0

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION	SO.FT.
(R00037)	Q	CALLUVAL1146(EXT)KIM[S.1]	6.380	-1.960	.000	.000	SREF	5500.0000
(R00036)	Q	CALLUVAL1146(EXT)KIM[S.1]	6.380	-1.880	.000	.000	LREF	327.7800
(R00026)	X	CALLUVAL1146(EXT)KIM[S.6V9.4]	6.380	-1.880	.000	.000	BREF	2348.0000
(R00030)	X	CALLUVAL1146(EXT)KIM[S.7V9.4]	6.380	-1.880	.000	.000	XHRP	1339.5100
(R00031)	X	CALLUVAL1146(EXT)KIM[S.11V9.4]	6.380	-1.880	.000	.000	ZHRP	190.7500
							SCALE	.0400

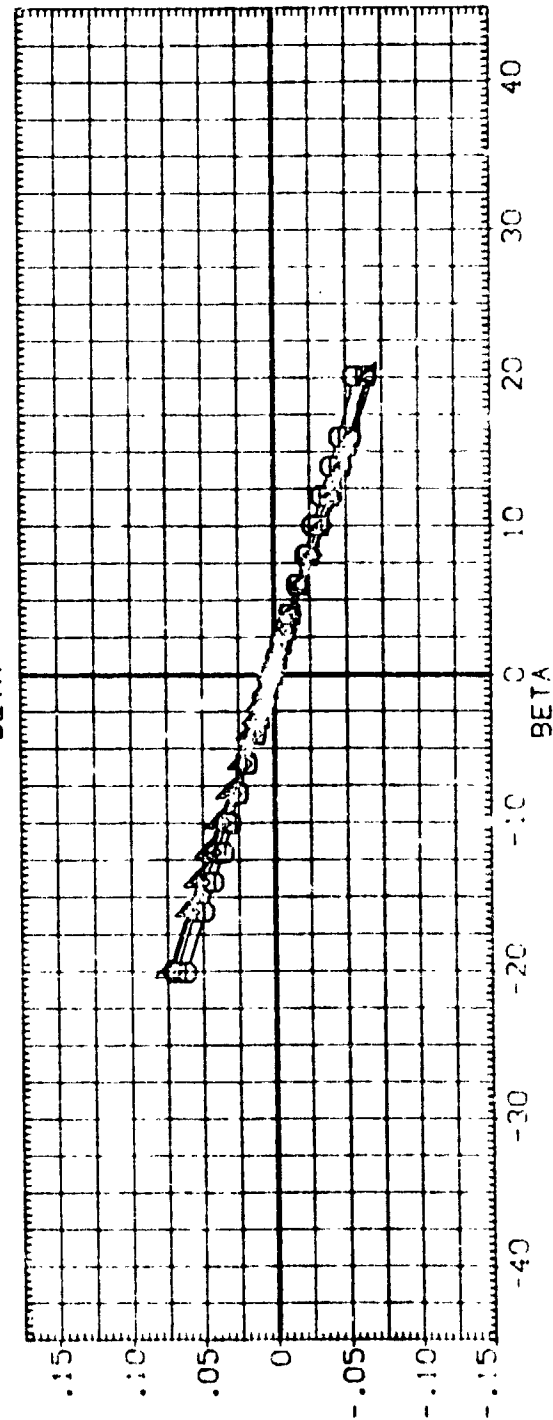
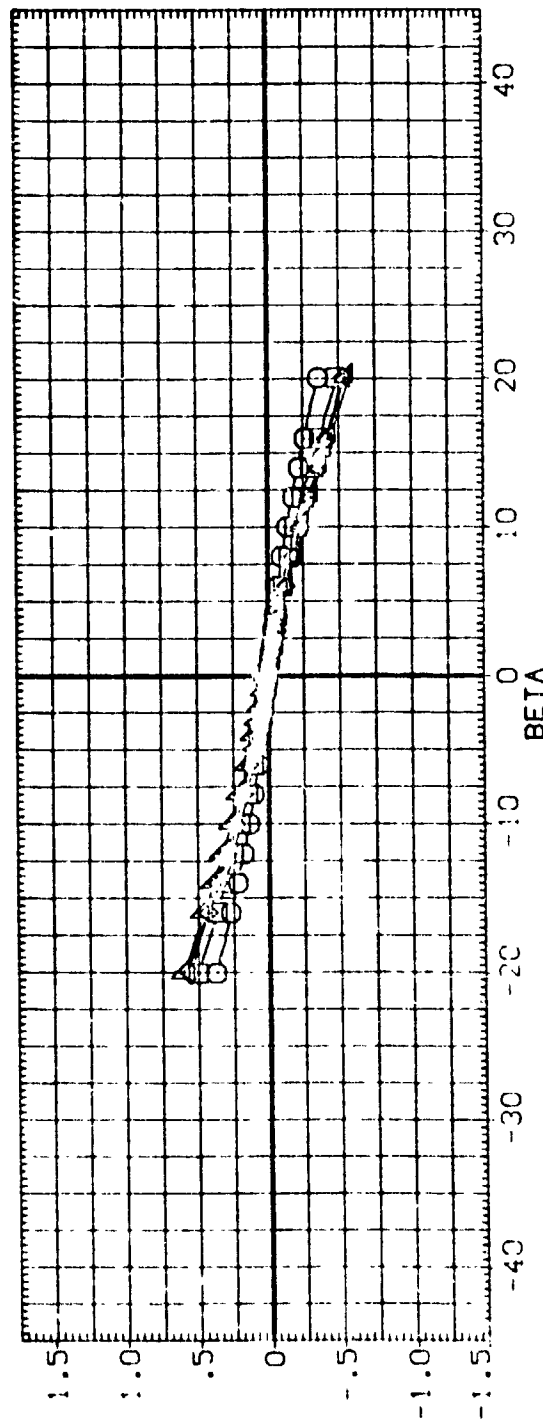


FIG.23 EFFECT OF 747 VERTICAL FINS. CONF.1, ALPHA=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT70AT71	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0037)	CA11UWAL1146(EXT)K1H15.1	128.1	6.380	-1.960	.000	.000	SREF 5500.0000 SO.FT.
(RG0036)	CA11UWAL1146(EXT)K1H15.1V9.1	128.1	6.380	-1.980	.000	.000	YREF 327.7800 IN.
(RG0026)	CA11UWAL1146(EXT)K1H15.6V9.4	128.1	6.380	-1.980	.000	.000	BREF 2348.0000 IN.
(RG0030)	CA11UWAL1146(EXT)K1H15.7V9.4	128.1	6.380	-1.980	.000	.000	XHRP 1339.5100 IN.
(RG0031)	CA11UWAL1146(EXT)K1H15.11V9.4	128.1	6.380	-1.980	.000	.000	YHRP .0000 IN.
							ZHRP 190.7500 IN.
							SCALE .0400

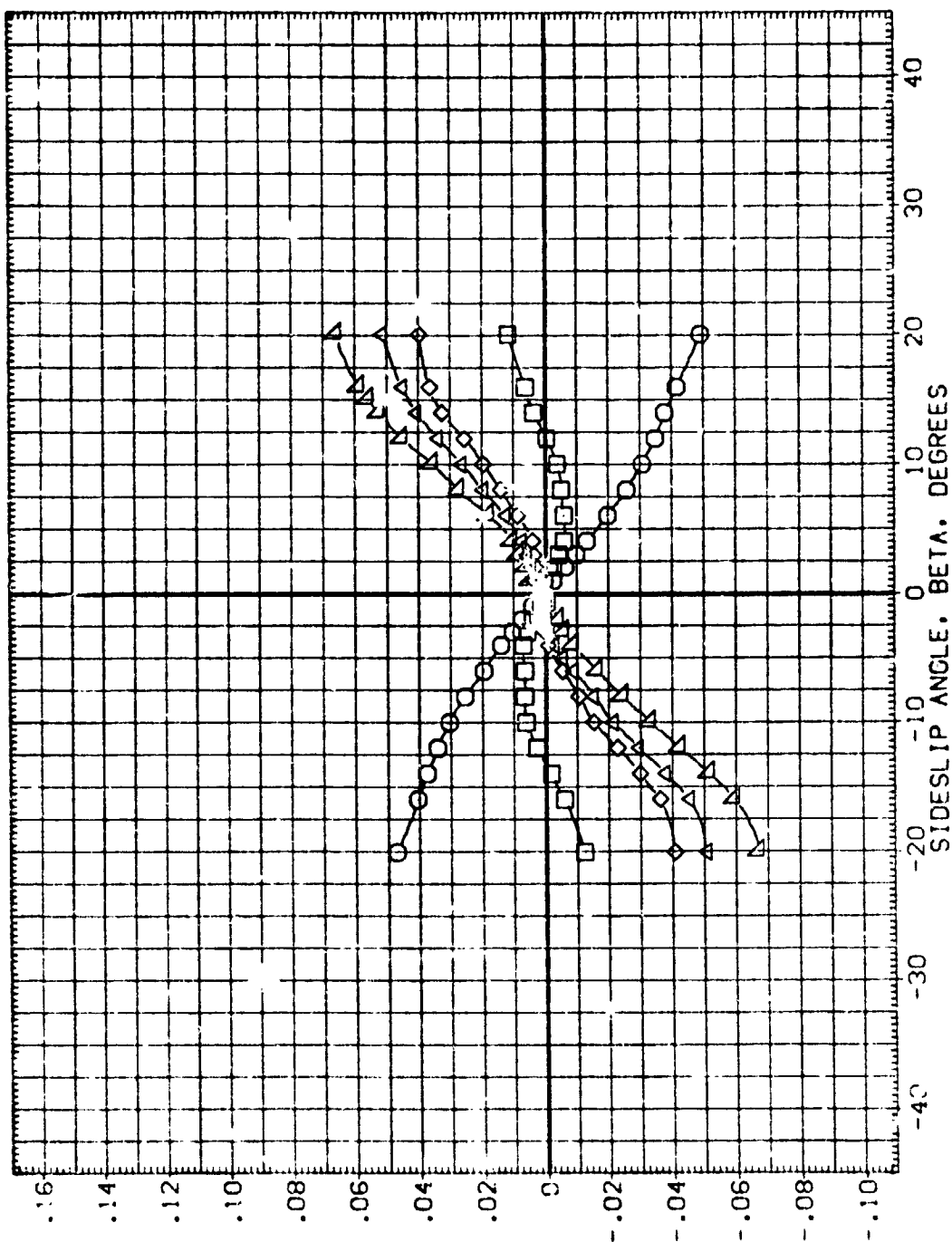






FIG.23 EFFECT OF 747 VERTICAL FINS, CONF.1, ALPHA=6.38, ELEVATORS=0.0

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0074)		CALLUWAL1146(EXT)KIN15.1	2.080	-1.930	.000	.000	SREF 5500.0000 SO.FT.
(RG0077)		CALLUWAL1146(EXT)KIN15.7V9.4	2.030	-1.930	.000	.000	LREF 327.7800 IN.
(RG0090)		CALLUWAL1146(EXT)KIN15.7V9.1	2.080	-2.000	.000	.000	BREF 2346.0000 IN.
(RG0095)		CALLUWAL1146(EXT)KIN15.1V9.1	2.080	-1.960	.000	.000	XMRP 1339.9100 IN.
							YMRP 190.7500 IN.
							ZMRP 190.7500 IN.
							SCALE .0400

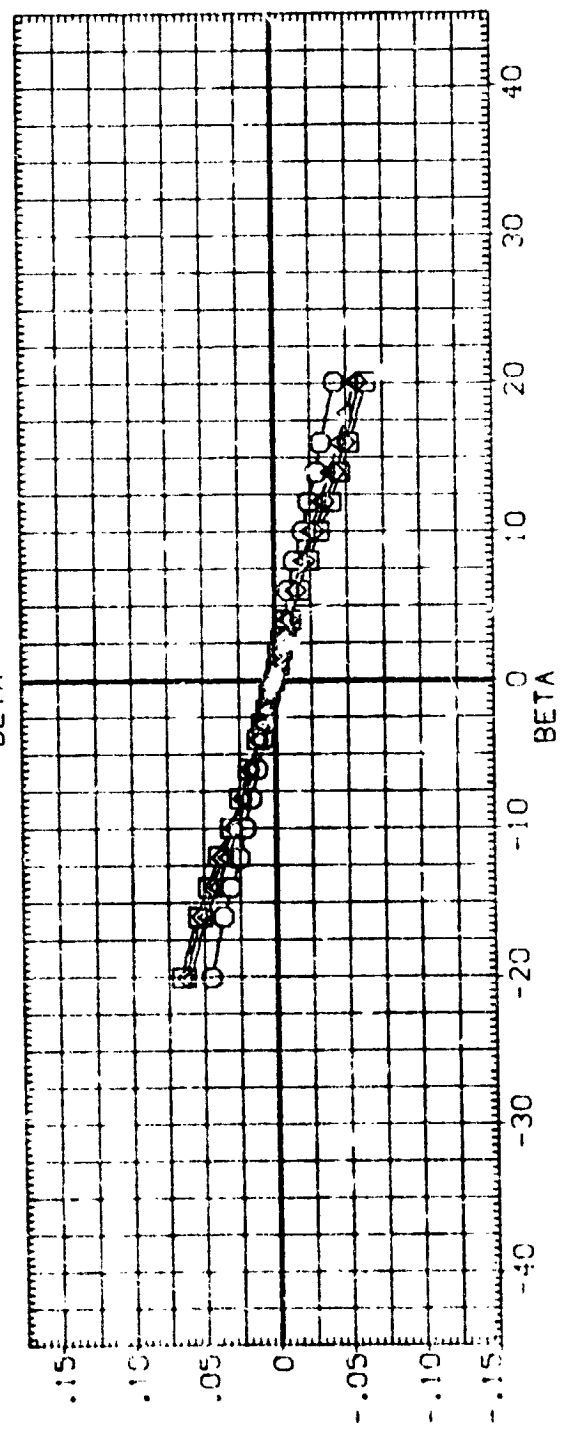
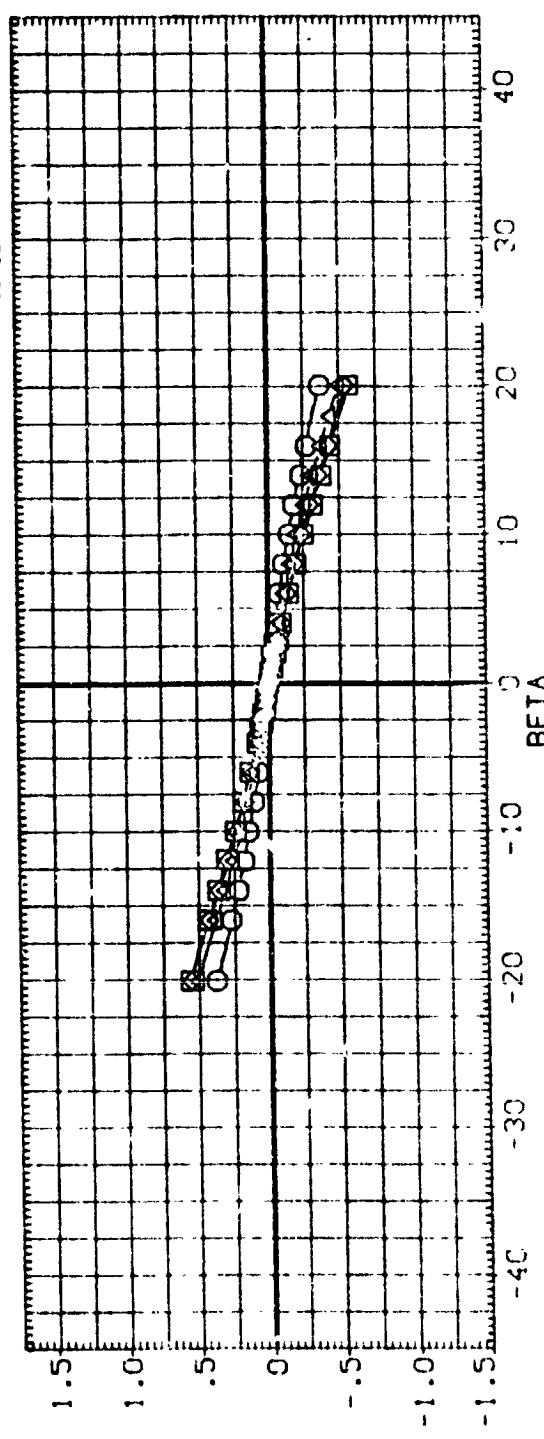


FIG.24 EFFECT OF VERTICAL FINS, CONF.1, ALPHA=2.08, ELEVATORS=0.0

(A)C = 36.13

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT70A171	ALPHA	ST	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0074)	CA11UWAL1146(EXT)KIH15.1	128.1	2.080	-1.000	.000	.000	SREF 5500.0000 50.57.
(RG0077)	CA11UWAL1146(EXT)KIH15.7V9.4	128.1	2.080	-1.000	.000	.000	LREF 327.7800 IN.
(RG0080)	CA11UWAL1146(EXT)KIH15.7V9.1	128.1	2.080	-2.000	.000	.000	BREF 2348.0000 IN.
(RG0095)	CA11UWAL1146(EXT)KIH15.1V9.1	128.1	2.080	-1.960	.000	.000	XHRP 1339.9100 IN. XC
							YHRP .0000 IN. YC
							ZHRP 190.7500 IN. ZC
							SCALE .0400

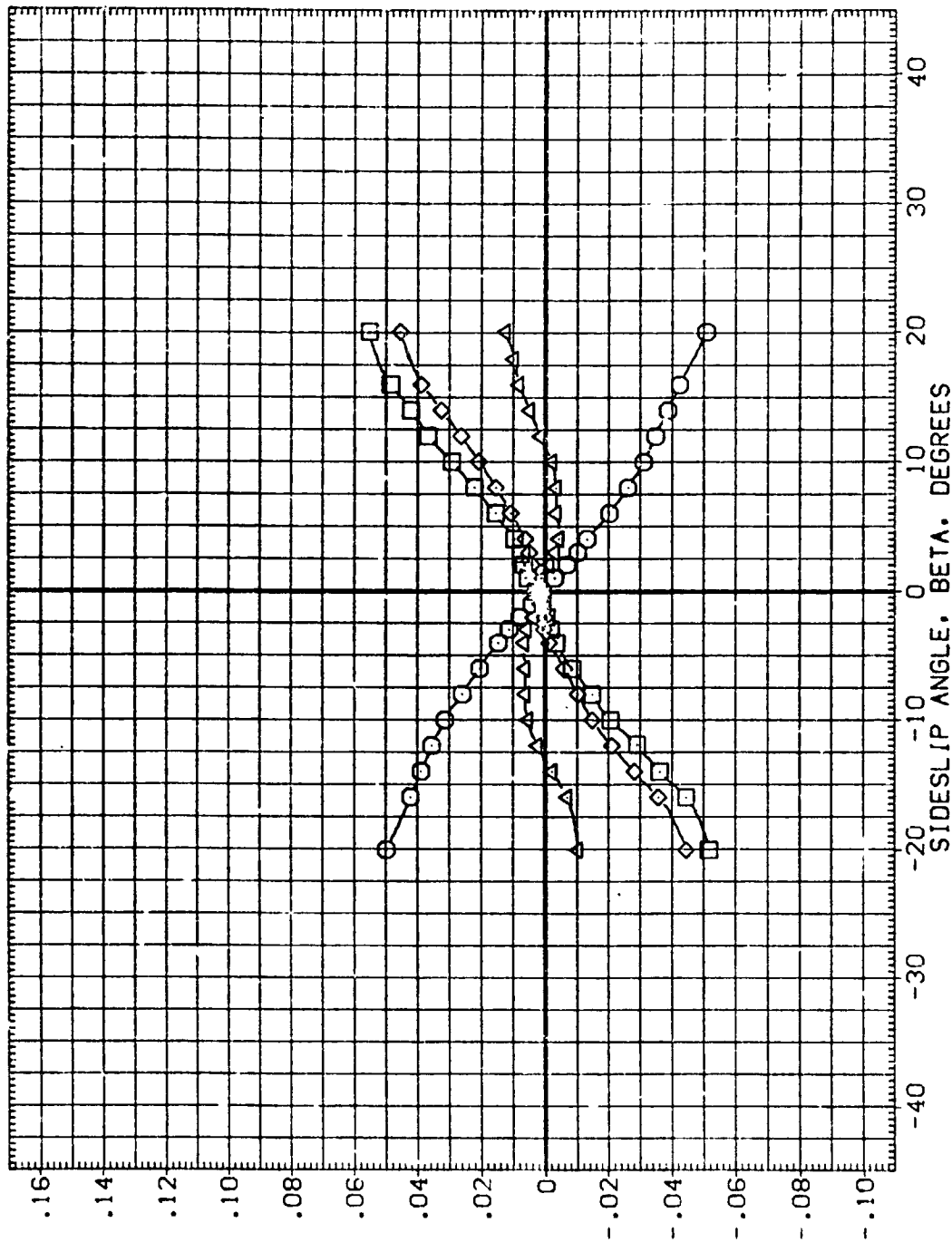


FIG.24 EFFECT OF VERTICAL FINS, CONF.1, ALPHA=2.08, ELEVATORS=0.0

(A)G = 36.13

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	AT70AT71	T28.1	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION	SO.FT.
(RG0073)		CALLUWAL1146(EXT)K1H15.1	AT70AT71	T28.1	6.380	-1.930	.000	.000	SREF	5500.0000
(RG0078)		CALLUWAL1146(EXT)K1H15.7V9.4	AT70AT71	T28.1	6.380	-1.930	.000	.000	LREF	327.7800
(RG0091)		CALLUWAL1146(EXT)K1H15.7V9.1	AT70AT71	T28.1	6.380	-1.960	.000	.000	BREF	2348.0000
(RG0094)		CALLUWAL1146(EXT)K1H15.1V9.1	AT70AT71	T28.1	6.380	-1.960	.000	.000	XMRP	190.9100
(RG0036)		CALLUWAL1146(EXT)K1H15.1V9.1	AT70AT71	T28.1	6.380	-1.880	.000	.000	YMRP	.0000
(RG0035)		CALLUWAL1146(EXT)K1H15.6V9.1	AT70AT71	T28.1	6.380	-1.880	.000	.000	ZMRP	190.7500
									SCALE	.0400

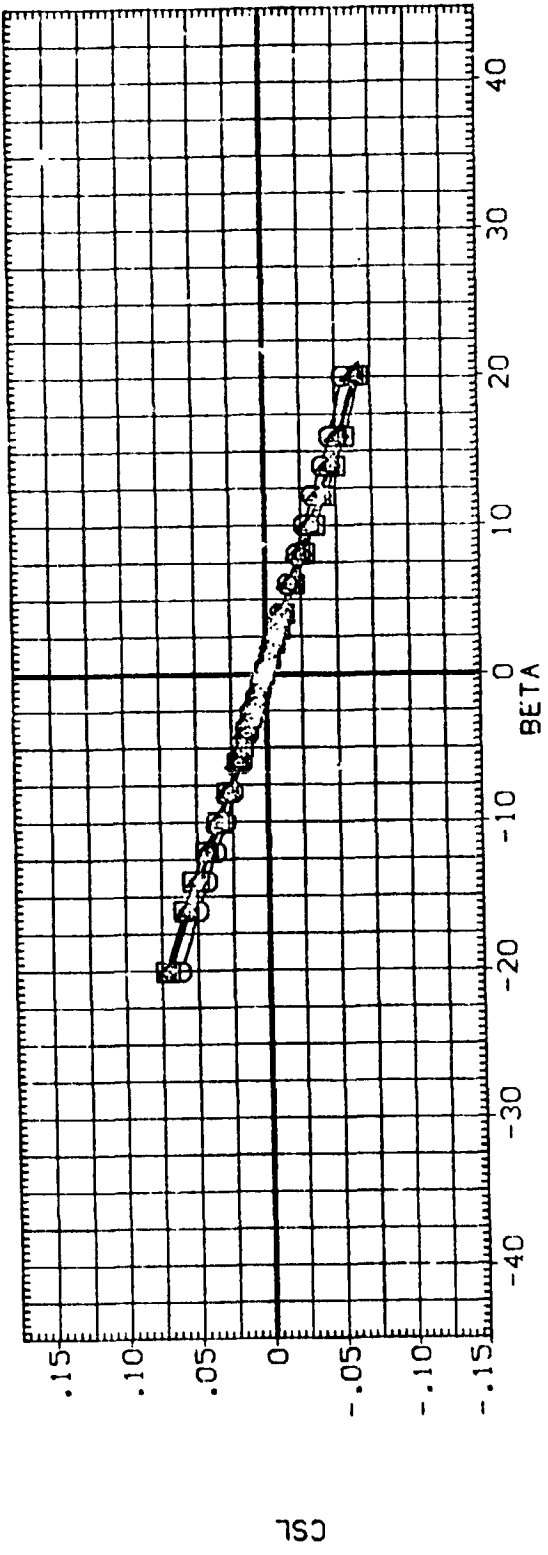
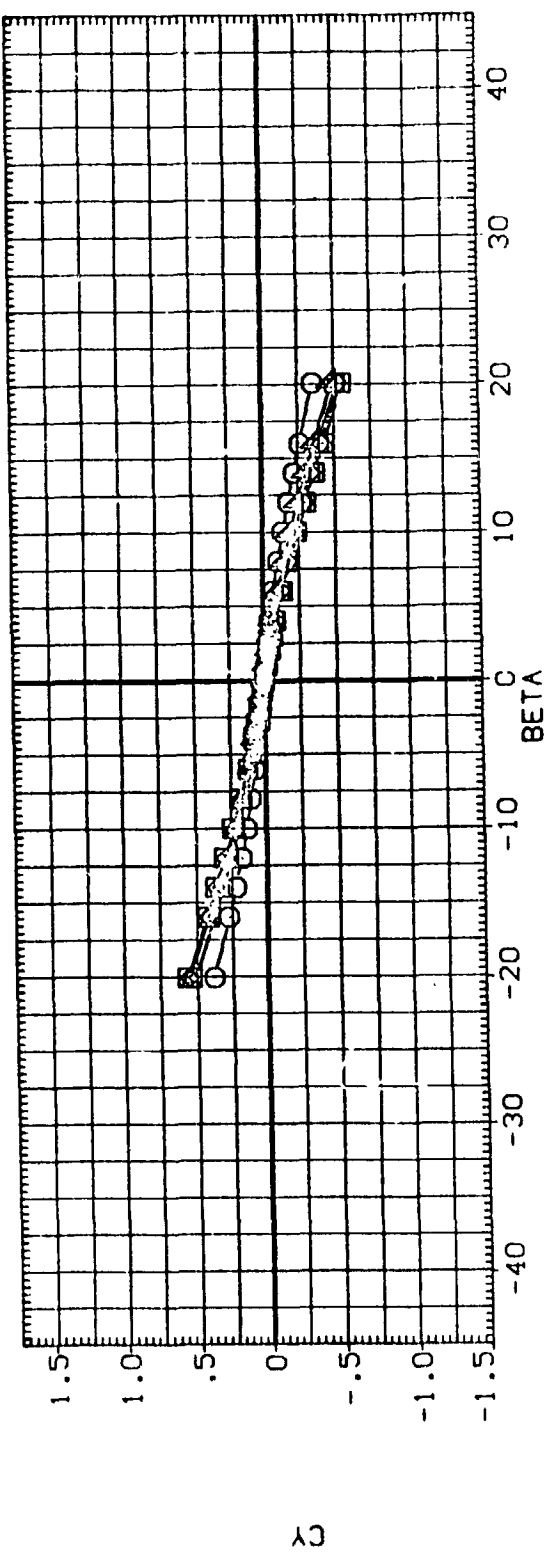


FIG.25 EFFECT OF VERTICAL FINS, CONF.1, ALPHA=6.38, ELEVATORS=0.0

(A)Q = 36.15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0073)	CA11UWAL1146(EXT)KIH15.1	6.380	-1.930	.000	.000	SREF 5500.0300 SQ. FT.
(RG0078)	CA11UWAL1146(EXT)KIH15.7V9.4	6.380	-1.930	.000	.000	LREF 327.7300 IN.
(RG0091)	CA11UWAL1146(EXT)KIH15.7V9.1	6.380	-1.950	.000	.000	BREF 2348.0300 IN.
(RG0094)	CA11UWAL1146(EXT)KIH15.1V9.1	6.380	-1.950	.000	.000	XMRP 1339.9100 IN.
(RG0036)	CA11UWAL1146(EXT)KIH15.1V9.1	6.380	-1.880	.000	.000	YMRP .0000 IN.
(RG0035)	CA11UWAL1146(EXT)KIH15.6V9.1	6.380	-1.880	.000	.000	ZMRP 190.7500 IN.
						SCALE .0400

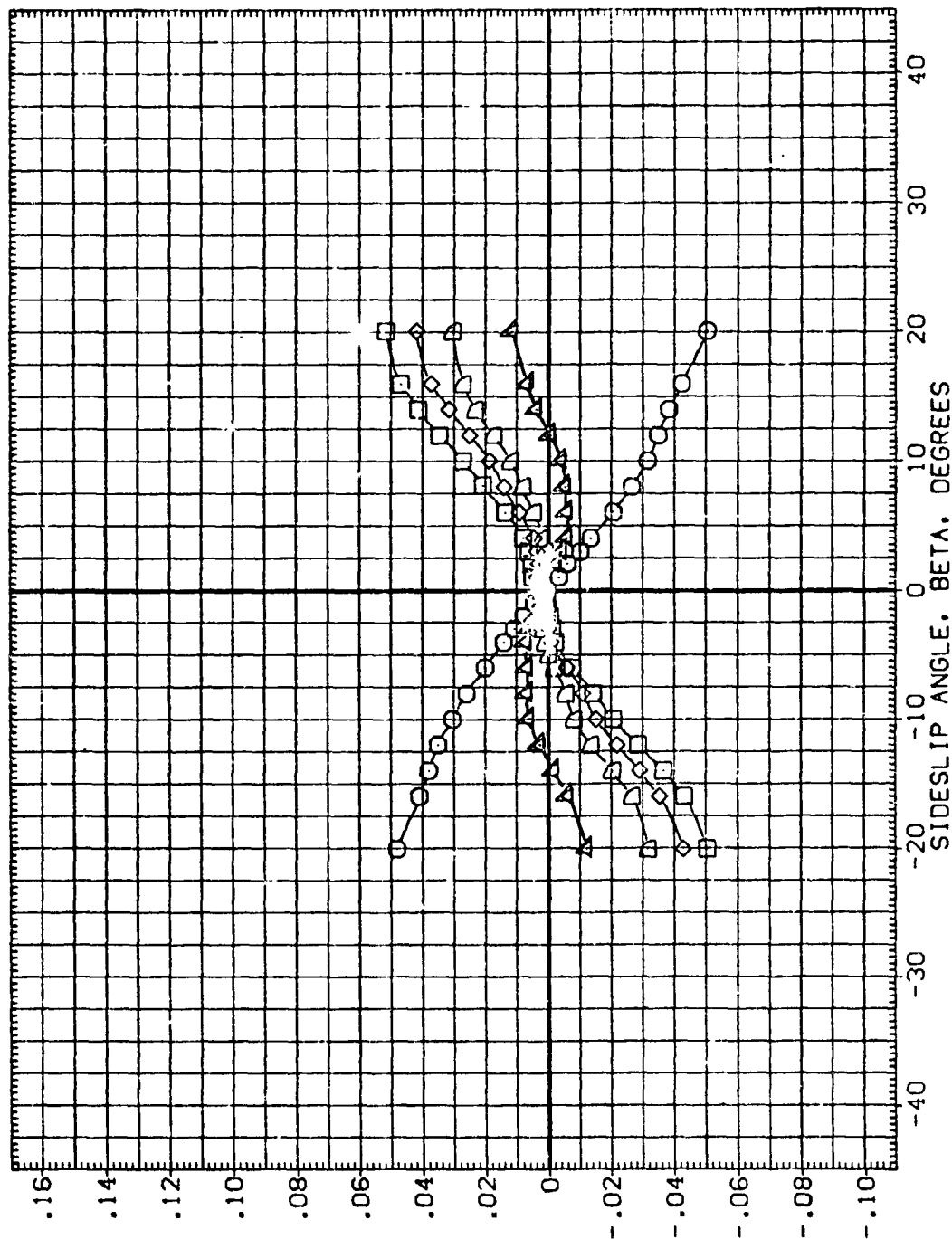


FIG.25 EFFECT OF VERTICAL FINS, CONF.1, ALPHA=6.38, ELEVATORS=0.0

(A)Q = 36.15

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0075)	CA11UWAL1146(EXT)K1H15.1	12.790	-1.930	.000	.000	SREF 5500.0000 SO.FT. IN.
(RG0079)	CA11UWAL1146(EXT)K1H15.7V9.4	12.790	-1.930	.000	.000	LREF 327.7800 IN.
(RG0092)	CA11UWAL1146(EXT)K1H15.7V9.1	12.790	-1.960	.000	.000	BREF 2348.0000 IN. XC
(RG0093)	CA11UWAL1146(EXT)K1H15.1V9.1	12.790	-1.960	.000	.000	XMRP 1339.9100 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

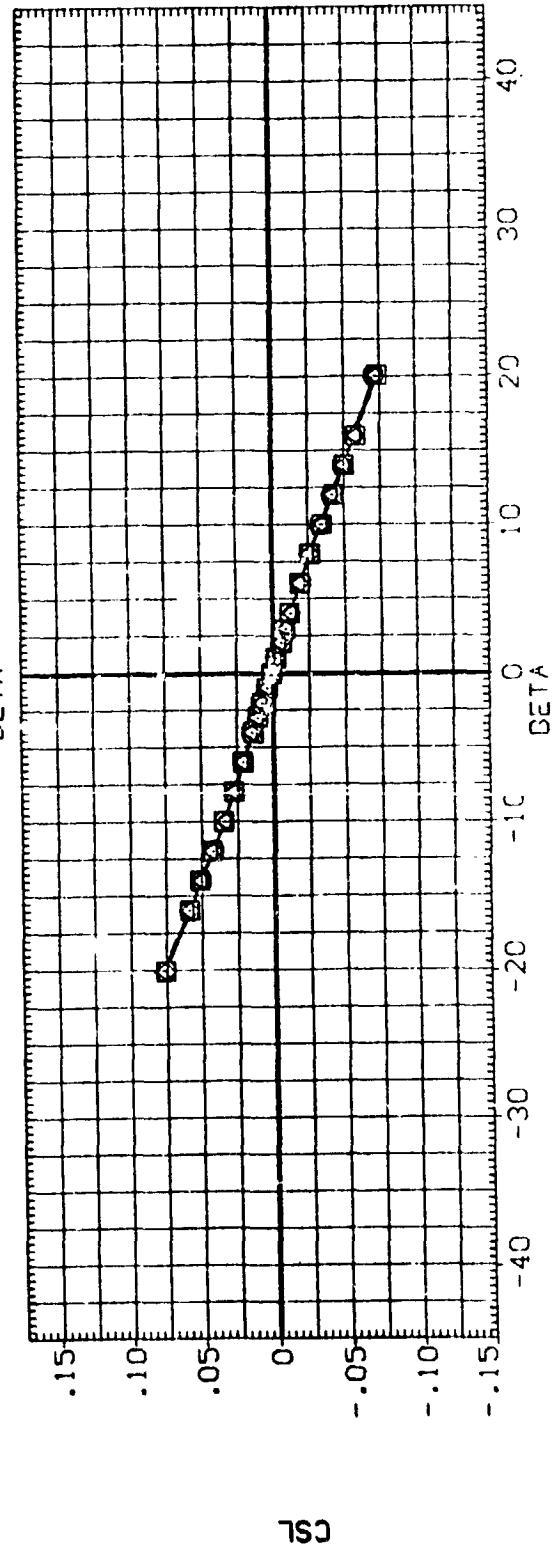
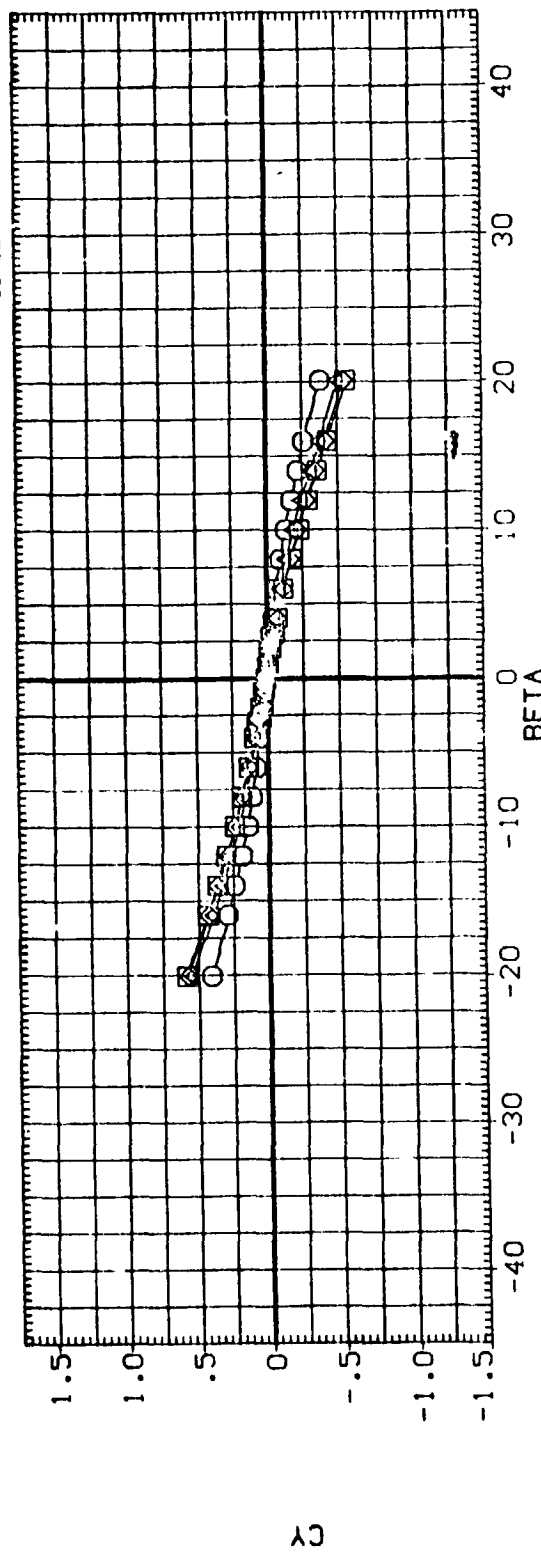


FIG.26 EFFECT OF VERTICAL FINS, CONF.1, ALPHA=12.79, ELEVATORS=0.0

(A)Q = 36.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT70AT71	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0075)	CALLUWAL1146(EXT)K1H15.1	T28.1	12.790	-1.930	.000	.000	SREF 5500.0000 SQ. FT.
(RG0079)	CALLUWAL1146(EXT)K1H15.7V9.4	T28.1	12.790	-1.930	.000	.000	LREF 327.7800 IN.
(RG0092)	CALLUWAL1146(EXT)K1H15.7V9.1	T28.1	12.790	-1.960	.000	.000	BRE 2348.0000 IN.
(RG0093)	CALLUWAL1146(EXT)K1H15.1V9.1	T28.1	12.790	-1.960	.000	.000	YMRP 1339.9100 IN. XC
							ZMRP .0000 IN. ZC
							SCALE 190.7500 IN. ZC

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

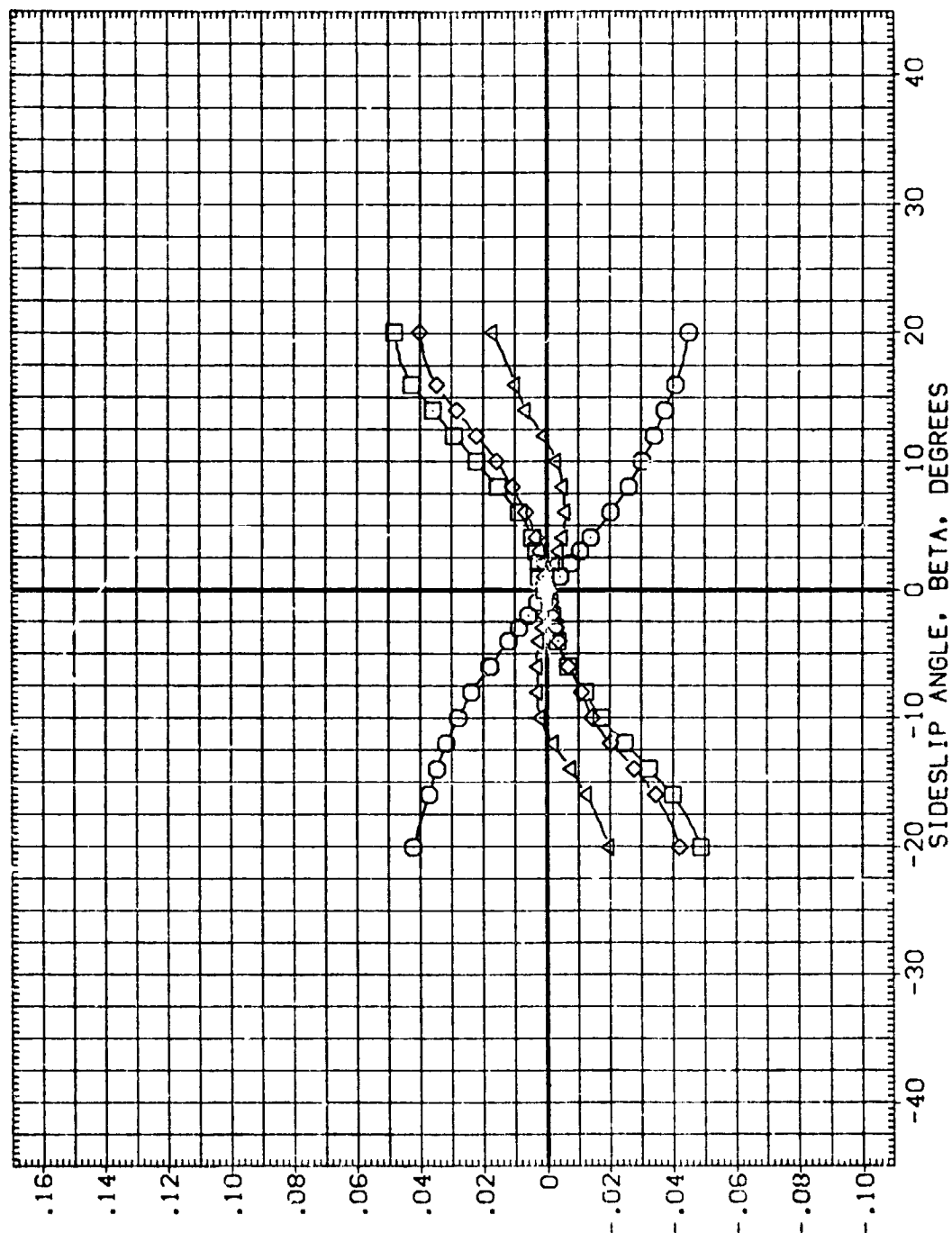


FIG.26 EFFECT OF VERTICAL FINS, CONF.1, ALPHA=12.79, ELEVATORS=0.0

(A)0 = 36.25

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT70AT71	T28.1	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0026)	CALLUWAL1146EXTJKIH15.6V9.4	AT70AT71	T28	6.380	-1.880	.000	.000	SREF 5500.0000 SQ.FT.
(RG0034)	CALLUWAL1146EXTJKIH15.6V9.4	AT70AT71	T28	6.380	-1.880	.000	.000	LREF 327.7800 IN.
								BREF 2348.0000 IN.
								XMRP 1339.9100 IN. XC
								YMRP .0000 IN. YC
								ZMRP 190.7500 IN. ZC
								SCALE .0400

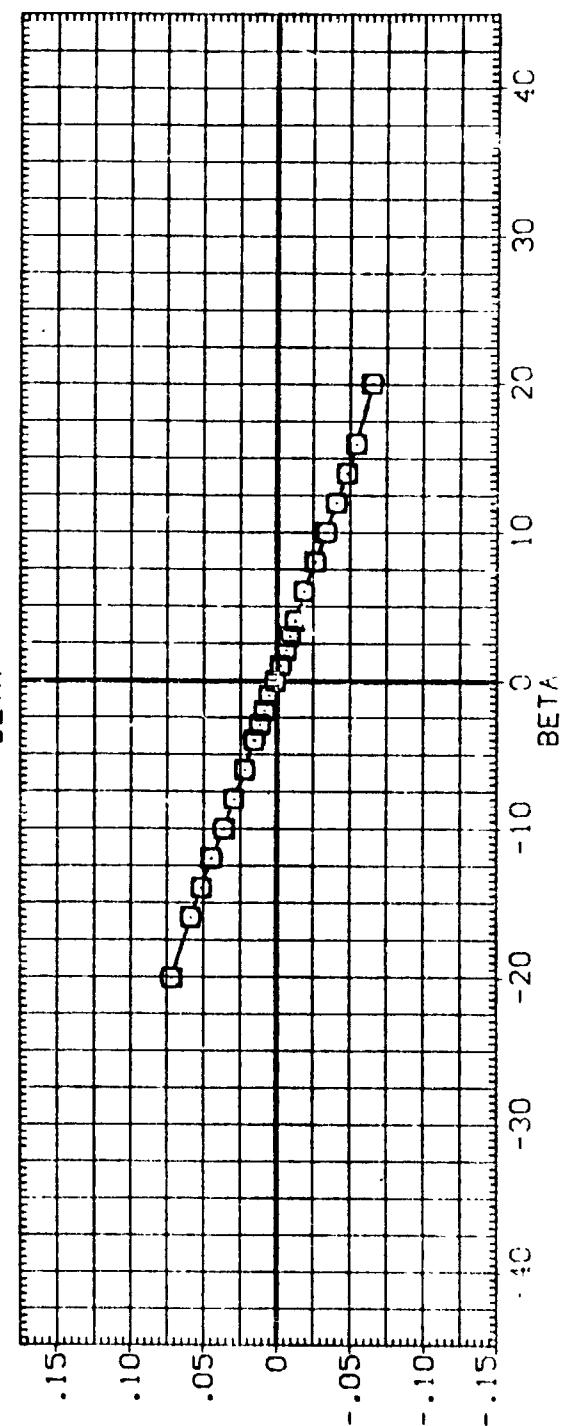
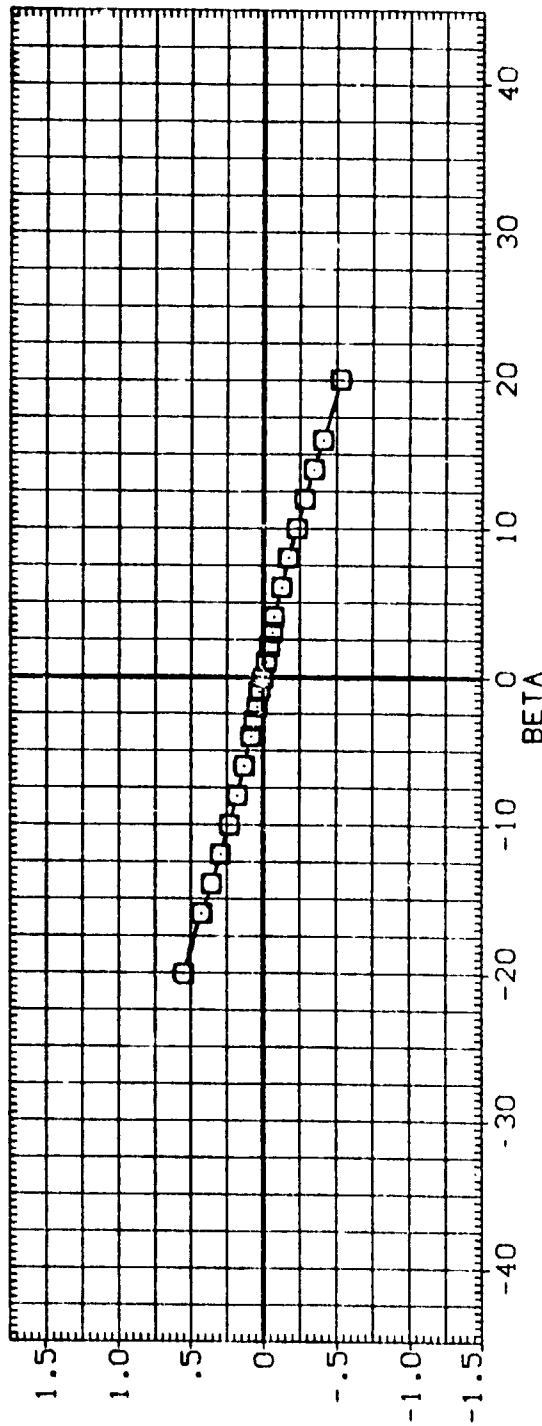


FIG.27 EFFECT OF ORBITER SUPPORT STRUTS, CONF.1, ALPHA=6.38, ELEVATORS=0.0

(A) = 36.24

DATA SET SYMBOL (R6C026) (R6C034)

CONFIGURATION DESCRIPTION  
 CALLUVAL1146(EXT)K1H15.6V9.4  
 CALLUVAL1146(EXT)K1H15.6V9.4

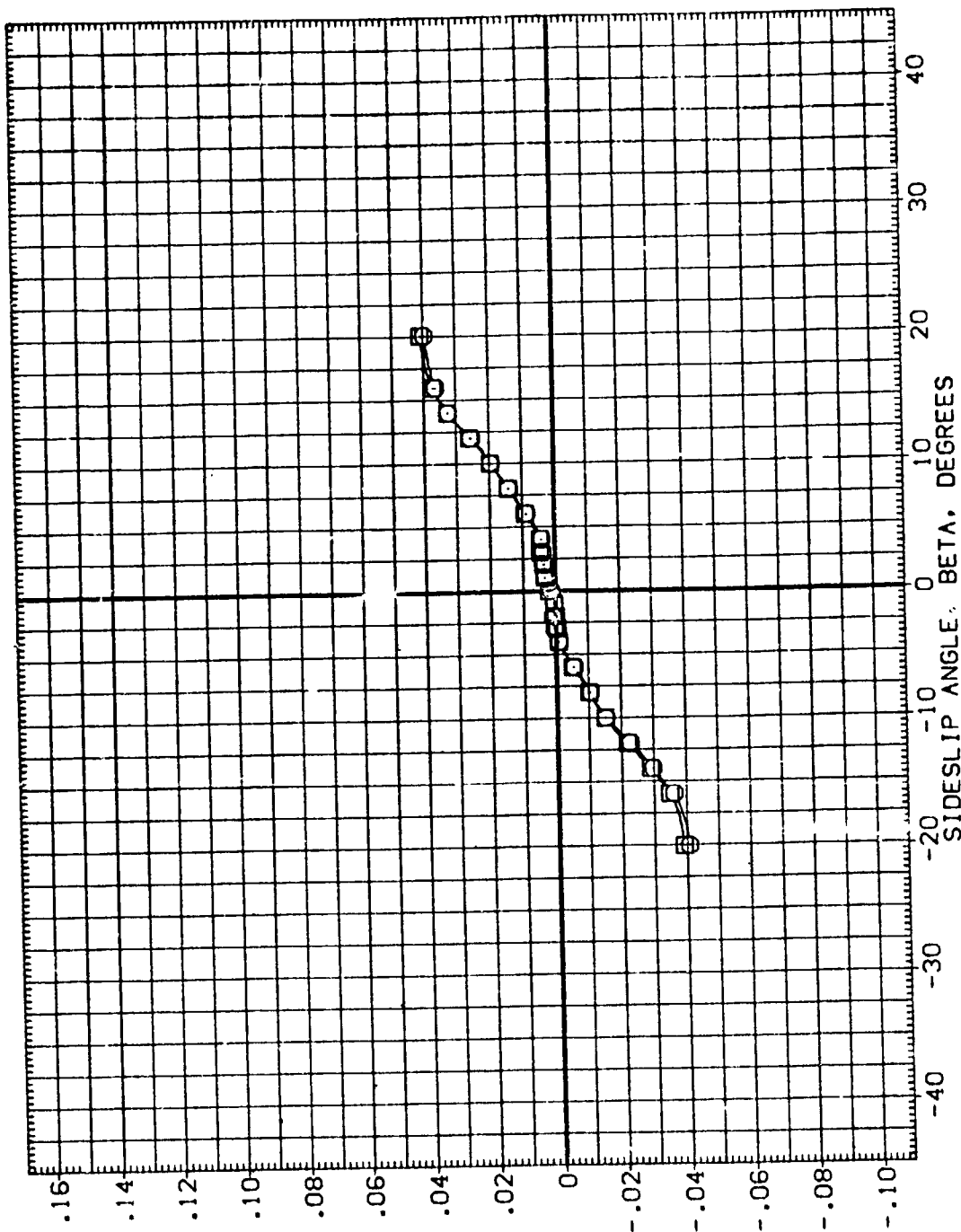
AT70AT71 T28.1  
 AT70AT71 T28

ALPHA STAB  
 6.380 -1.880  
 6.380 -1.880

RUD-U  
 .000 .000

RUD-L  
 .000 .000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0000 IN.  
 XMRP 1339.9100 IN.  
 YMRP .0000 IN.  
 ZMRP 190.7500 IN.  
 SCALE .0400



YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

FIG.27 EFFECT OF ORBITER SUPPORT STRUTS, CONF.1, ALPHA=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAW	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0031)	CA111UWAL1146(EXT)K1H15.11V9.4	AT70AT71 T28.1	-1.880	.000	.000	SREF 5500.0000 SQ.FT.
(RG0032)	CA111UWAL1146(EXT)K1H15.11V9.4	AT72AT73 T28.1	-1.880	.000	.000	LREF 327.7800 IN.
(RG0033)	CA111UWAL1146(EXT)K1H15.11V9.4	AT72.1AT73.1 T28.1	-1.880	.000	.000	BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

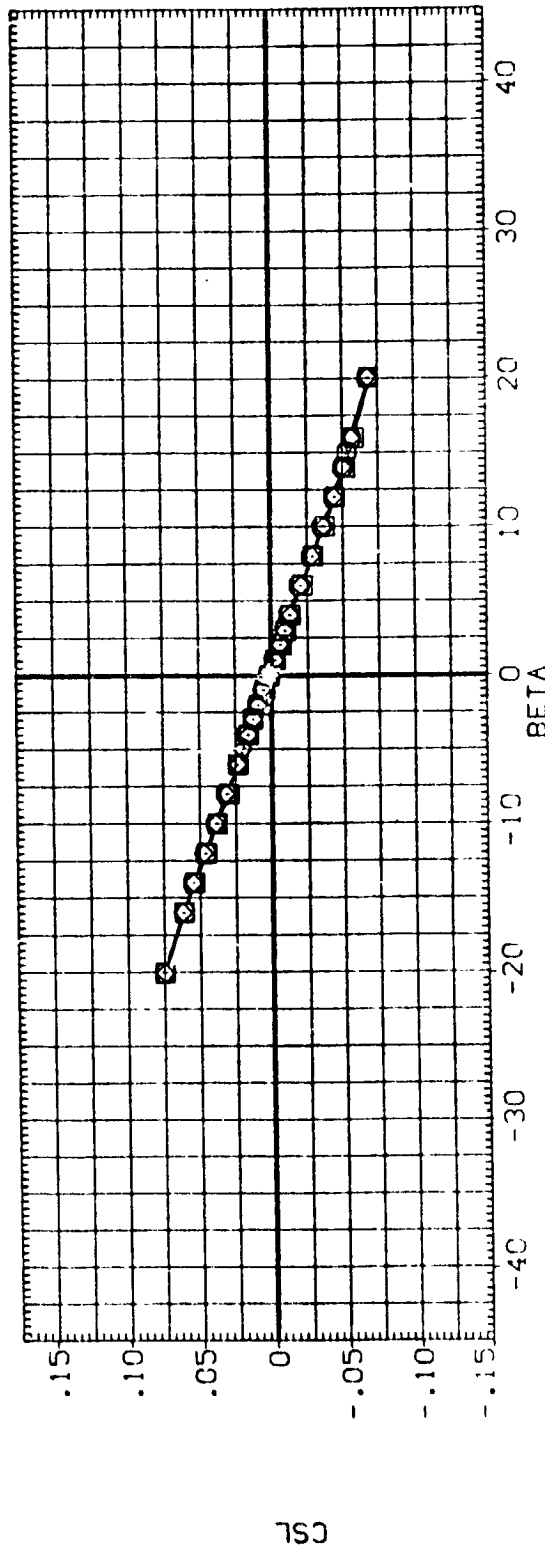
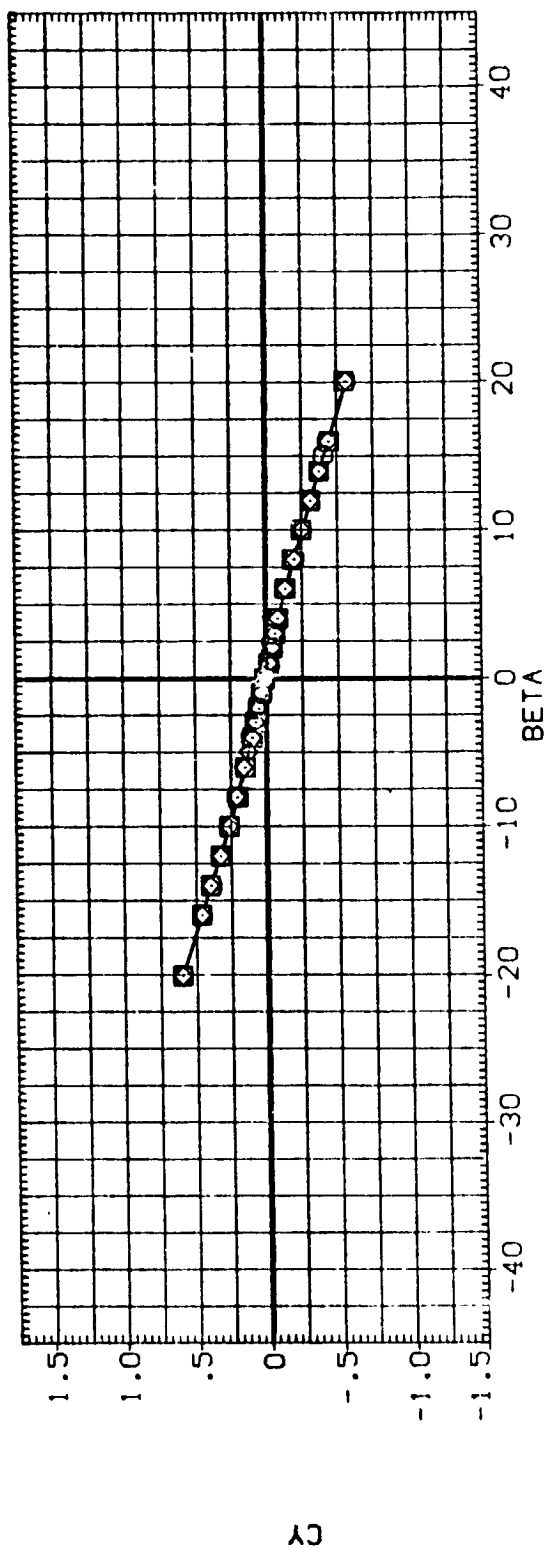


FIG.28 EFFECT OF TANK SUPPORT DIAGONAL BRACES, CONF.1, ALPHAW=6.38, ELEV.=0.0  
 (A12) = 35.27 PAGE 49

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0031)	CALLUVAL1146(EXT)KIH15.11V9.4	6.380	-1.880	.000	.000	SREF 5500.0000 SO.FT.
(RG0032)	CALLUVAL1146(EXT)KIH15.11V9.4	6.380	-1.880	.000	.000	LREF 327.7800 IN.
(RG0033)	CALLUVAL1146(EXT)KIH15.11V9.4	6.380	-1.880	.000	.000	BREF 2348.0000 IN.
						XRRP 1339.9100 IN. XC
						YRRP .0000 IN. YC
						ZRRP 190.7500 IN. ZC
						SCALE .0400

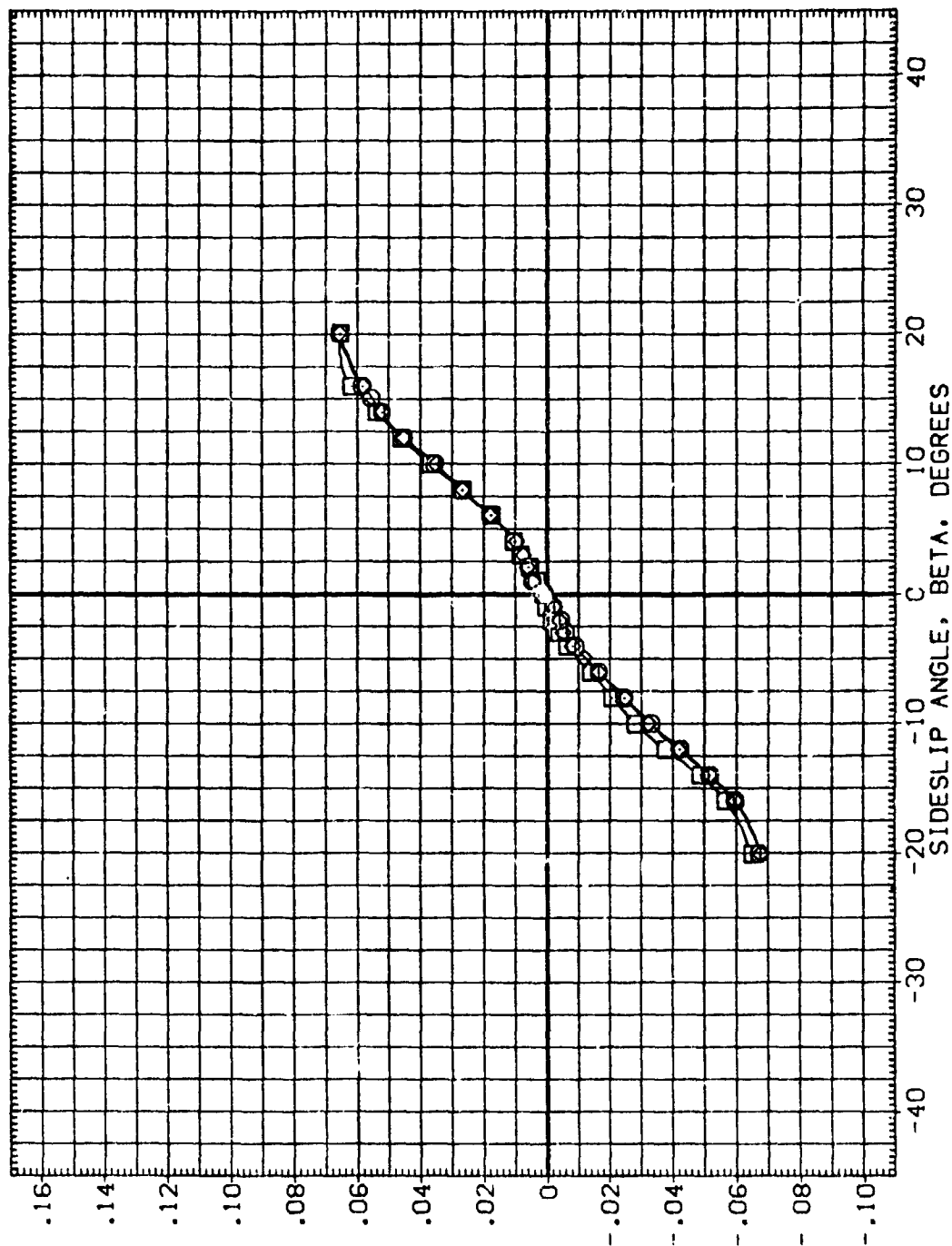


FIG.28 EFFECT OF TANK SUPPORT DIAGONAL BRACES, CONF.1, ALPHA=6.38, ELEV.=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0077)	CA11UVAL1146(EXT)K1H15.7V9.4	2.080	-1.930	.000	.000	SREF 5500.0000 SQ.FT.
(RG0081)	CA11UVAL1146(EXT)K1H15.7V9.4	2.080	-1.930	25.000	25.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						YMRP 1339.9100 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

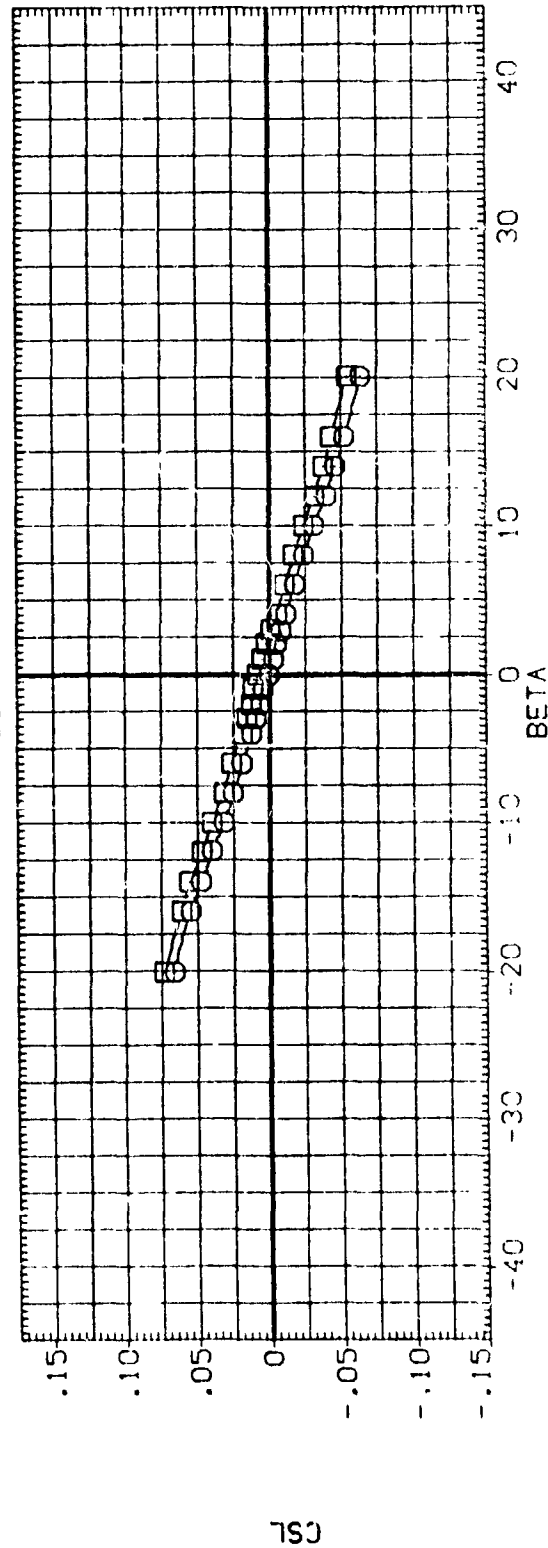
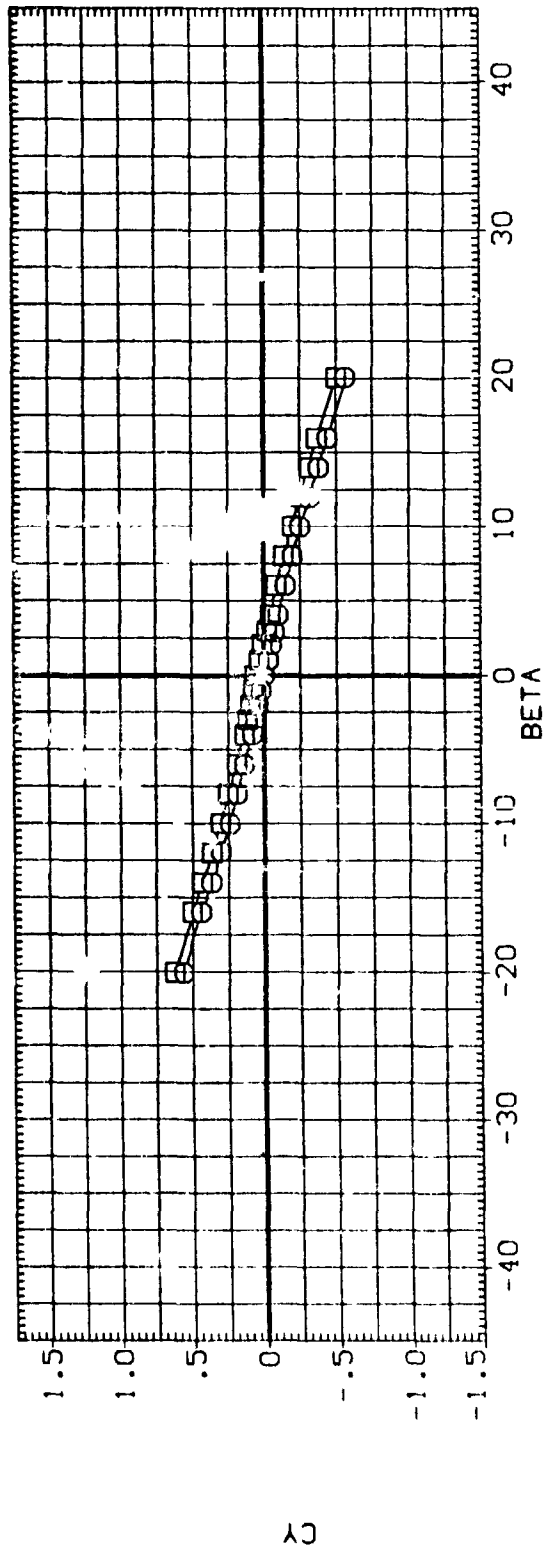


FIG.29 RUDDER EFFECTIVENESS, CONF.1, ALPHA=2.08, ELEVATORS=0.0

(A)S = 35.23

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0077)	CA11UWAL1146(EXT)K1H15.7V9.4	2.080	-1.930	.000	.000	SREF 5500.0000 SQ.FT.
(RG0081)	CA11UWAL1146(EXT)K1H15.7V9.4	2.080	-1.930	25.000	25.000	LREF 327.7500 IN.
						BREF 2348.0000 IN.
						XMRP 1329.9100 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

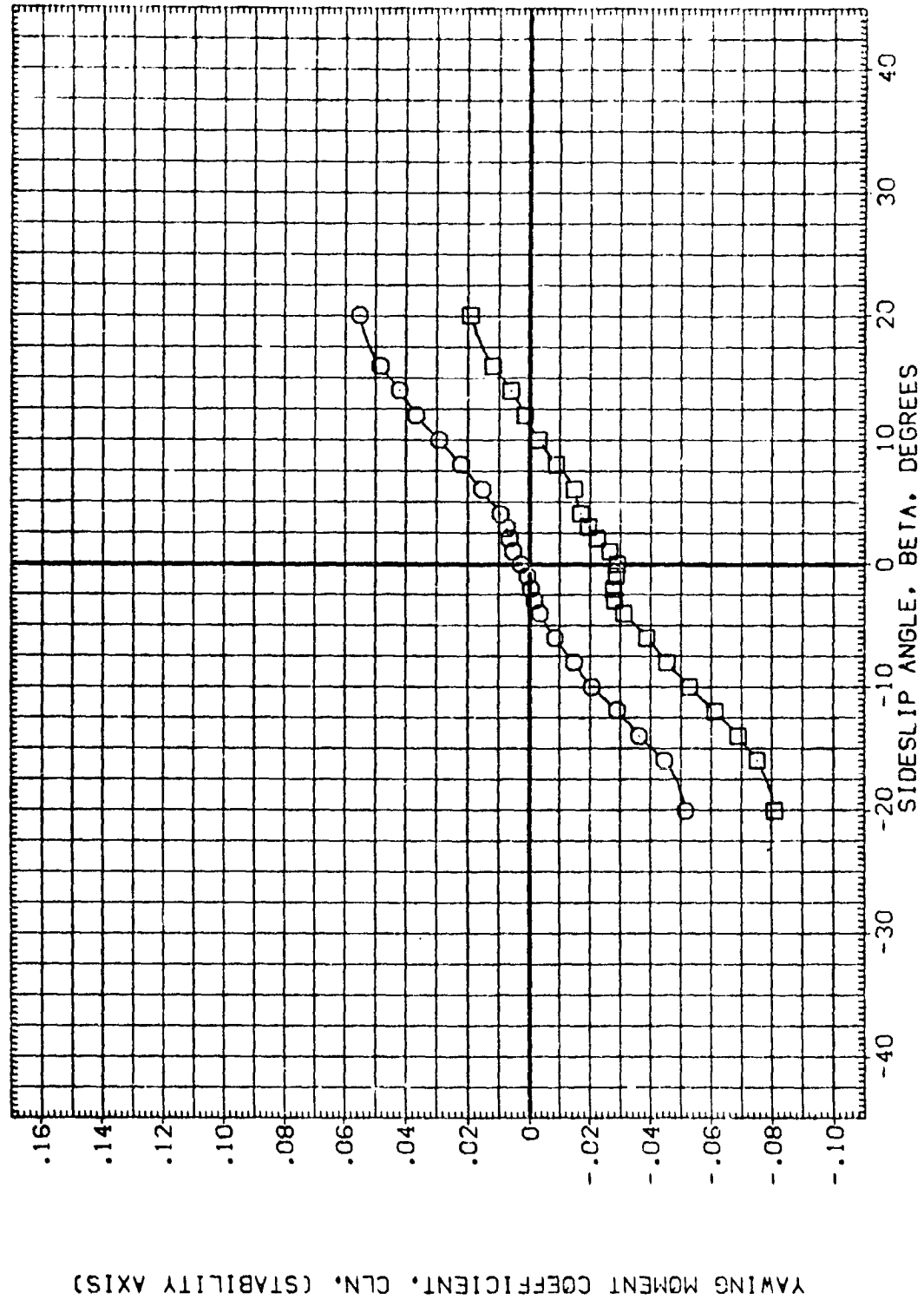


FIG.29 RUDDER EFFECTIVENESS, CONF.1, ALPHA=2.08, ELEVATORS=0.0

(A)Q = 36.23

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT70AT71	AT70AT71	AT70AT71	ALPHAW	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0078)	CA11UWAL1146(EXT)K1H1S.7V9.4	AT70AT71	AT70AT71	AT70AT71	6.380	-1.930	.000	.000	SREF 5500.0000 SQ.FT.
(RG0082)	CA11UWAL1146(EXT)K1H1S.7V9.4	AT70AT71	AT70AT71	AT70AT71	6.380	-1.930	.000	.000	LREF 327.7800 IN.
(RG0084)	CA11UWAL1146(EXT)K1H1S.7V9.4	AT70AT71	AT70AT71	AT70AT71	6.380	-1.930	.000	.000	BREF 2348.0000 IN.
(RG0085)	CA11UWAL1146(EXT)K1H1S.7V9.4	AT70AT71	AT70AT71	AT70AT71	6.380	-1.930	.000	.000	YMRP 1339.9100 IN.
									YMRP .0000 IN.
									ZMRP 190.7500 IN.
									SCALE .0400

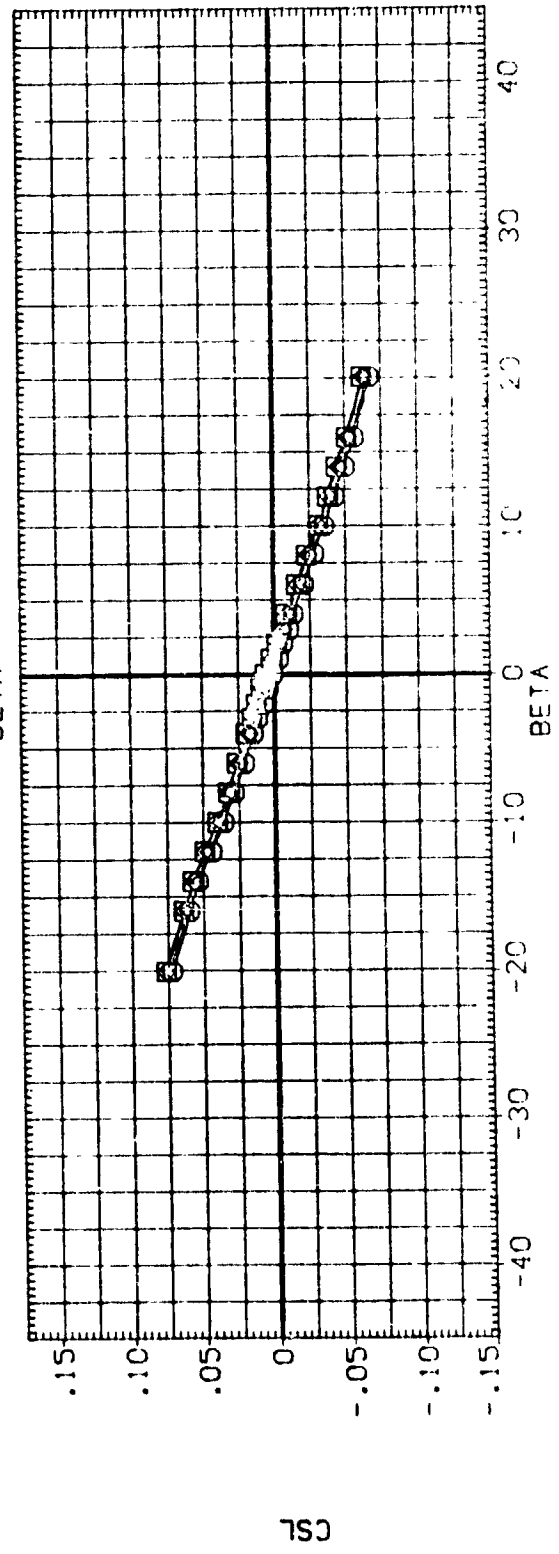
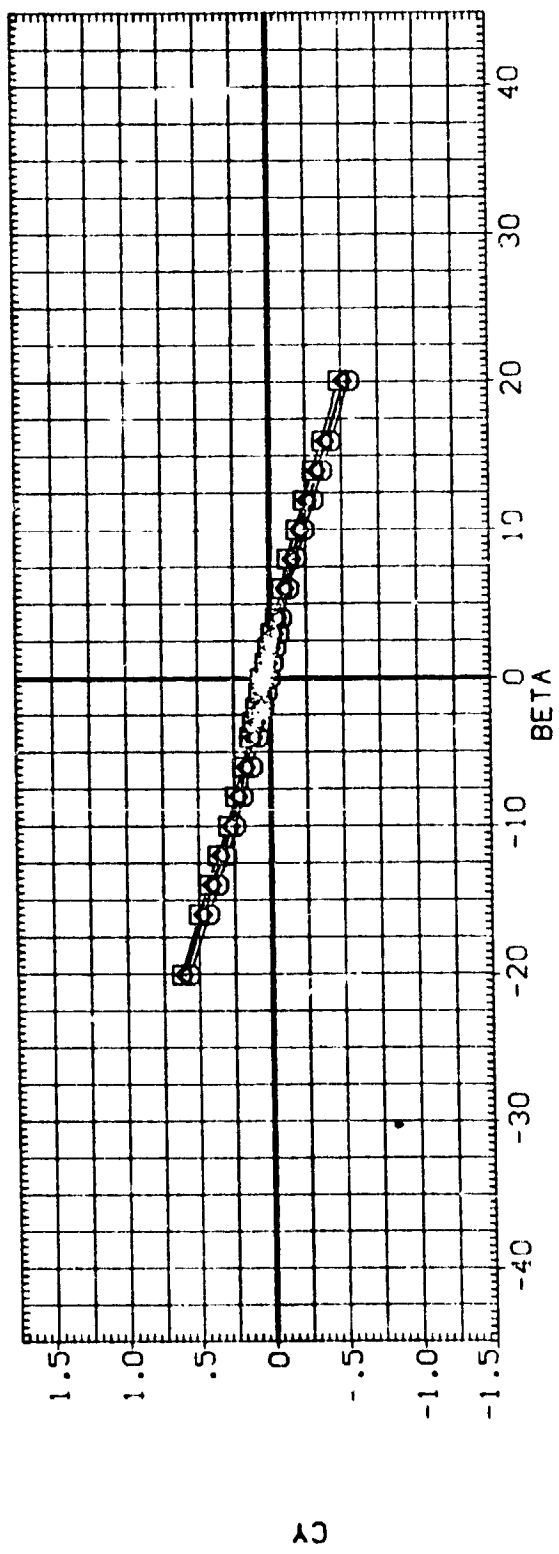
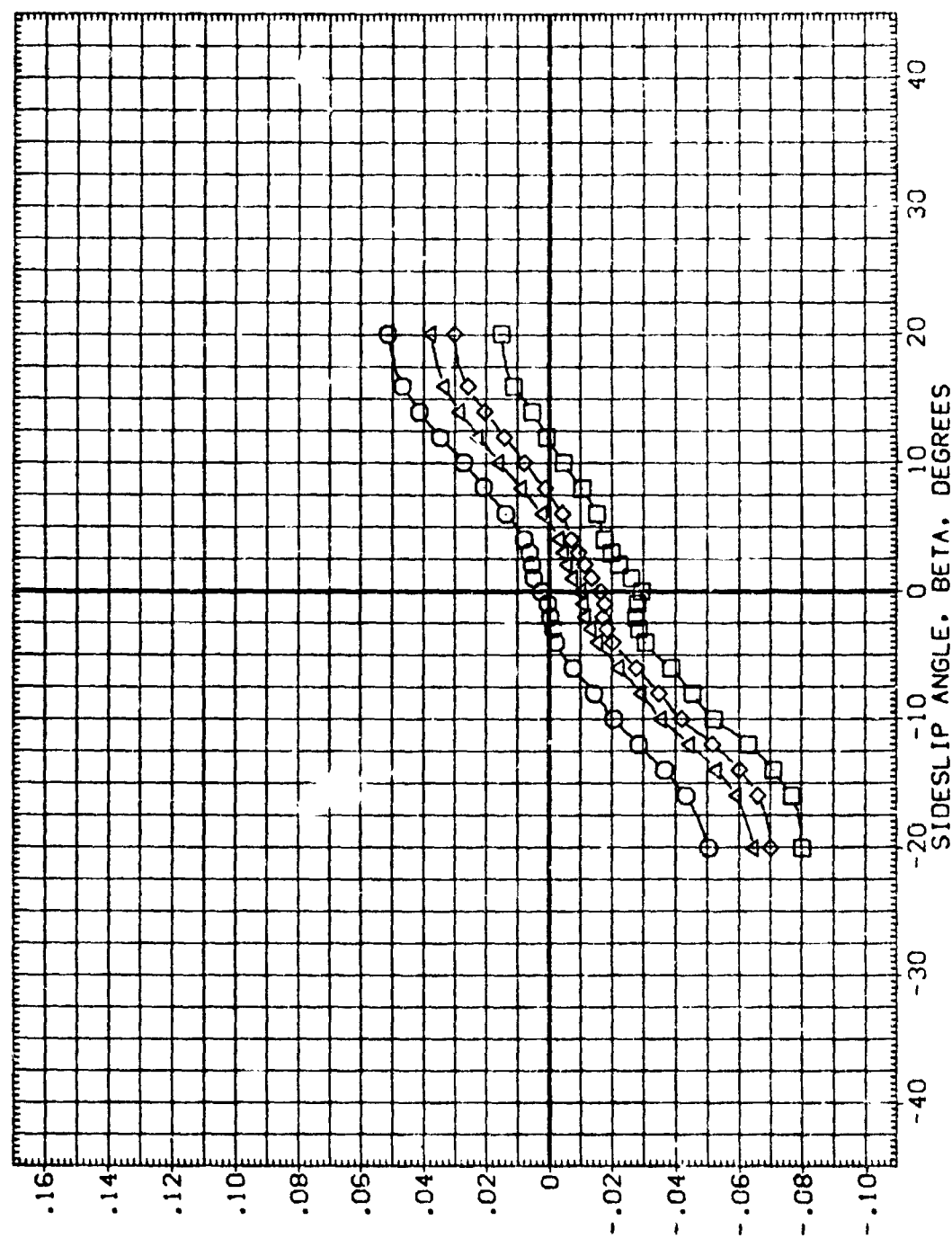


FIG.30 RUDDER EFFECTIVENESS, CONF.1 (280 SQ.FT. HTF), ALPHAW=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0078)	CALLJWAL1146(EXT)K1H1S.7V9.4	6.380	-1.930	.000	.000	SREF 5500.0000 SQ.FT.
(RG0082)	CALLJWAL1146(EXT)K1H1S.7V9.4	6.380	-1.930	25.000	25.000	LREF 327.7800 IN.
(RG0084)	CALLJWAL1146(EXT)K1H1S.7V9.4	6.380	-1.930	25.000	.000	BREF 2348.0000 IN.
(RG0085)	CALLJWAL1146(EXT)K1H1S.7V9.4	6.380	-1.930	.000	25.000	XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400



YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

FIG.30 RUDDER EFFECTIVENESS, CONF.1(280 SQ.FT. HTF), ALPHA=6.38, ELEVATORS=0.0  
 (A) = 36.25  
 PAGE 54

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0079)	CALLUVAL1146(EXT)KIH15.7V9.4	12.790	-1.930	.000	.000	SREF -500.0000 SQ.FT.
(RG0083)	CALLUVAL1146(EXT)KIH15.7V9.4	12.790	-1.930	25.003	25.000	LREF -327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

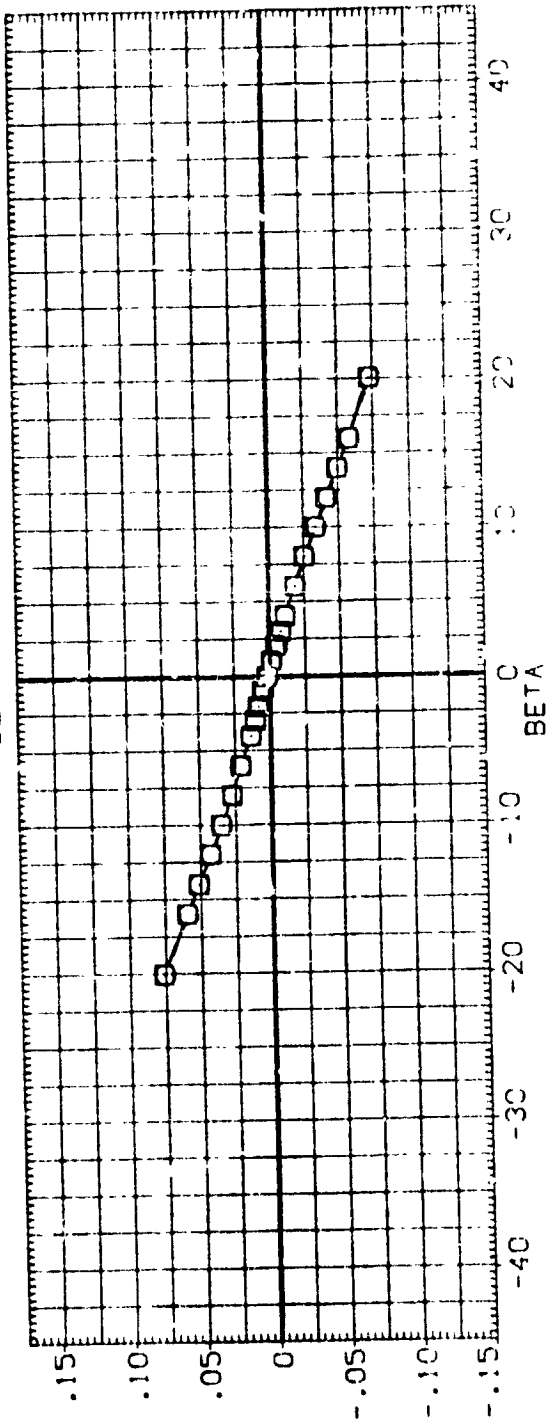
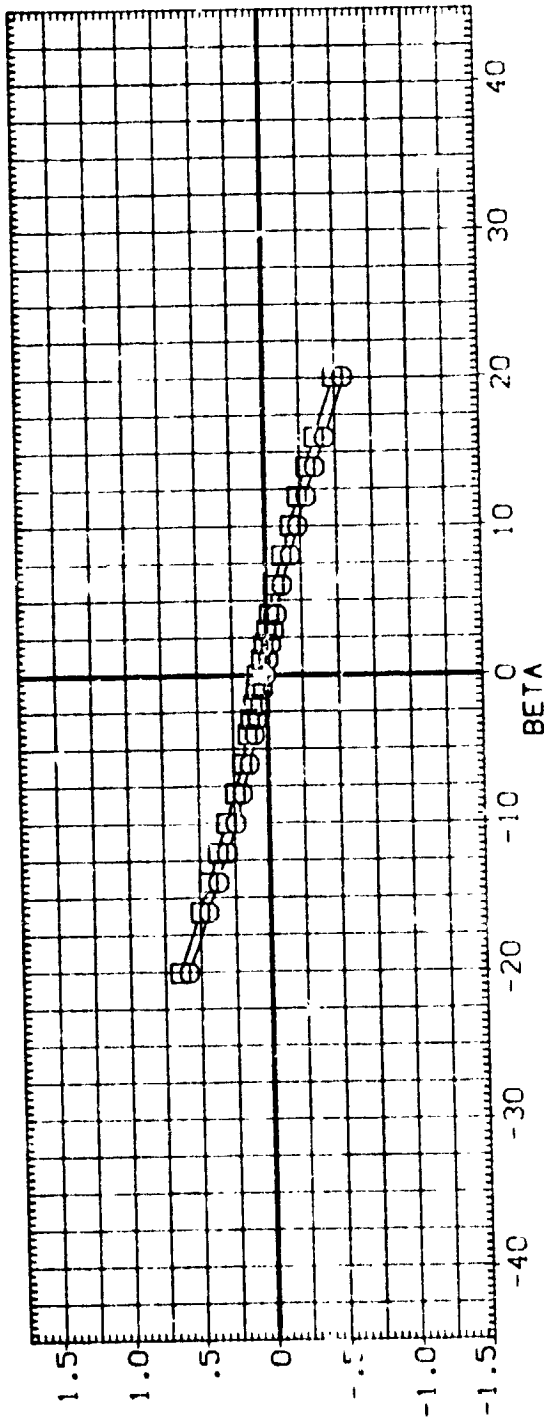


FIG.31 RUDDER EFFECTIVENESS, CONF.1, ALPHA=12.79, ELEVATOR=0.0

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		ALPHA		STAB		RUD-U		RUD-L		REFERENCE INFORMATION	
(130079)	(1460083)	CALLUVAL1146(EXT)K1H15.7V9.4	AT70AT71 128.1	12.790	-1.930	25.000	.000	25.000	SREF	5500.0000	50. FT.		
		CALLUVAL1146(EXT)K1H15.7V9.4	T70AT71 128.1	12.790	-1.930	25.000	.000	25.000	LREF	327.7800	IN.		
									BREF	2348.0000	IN.		
									YMRP	1339.9100	IN.		
									ZMRP	.0000	IN.		
									SCALE	190 7500	IN.		
										.0400	IN.		

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

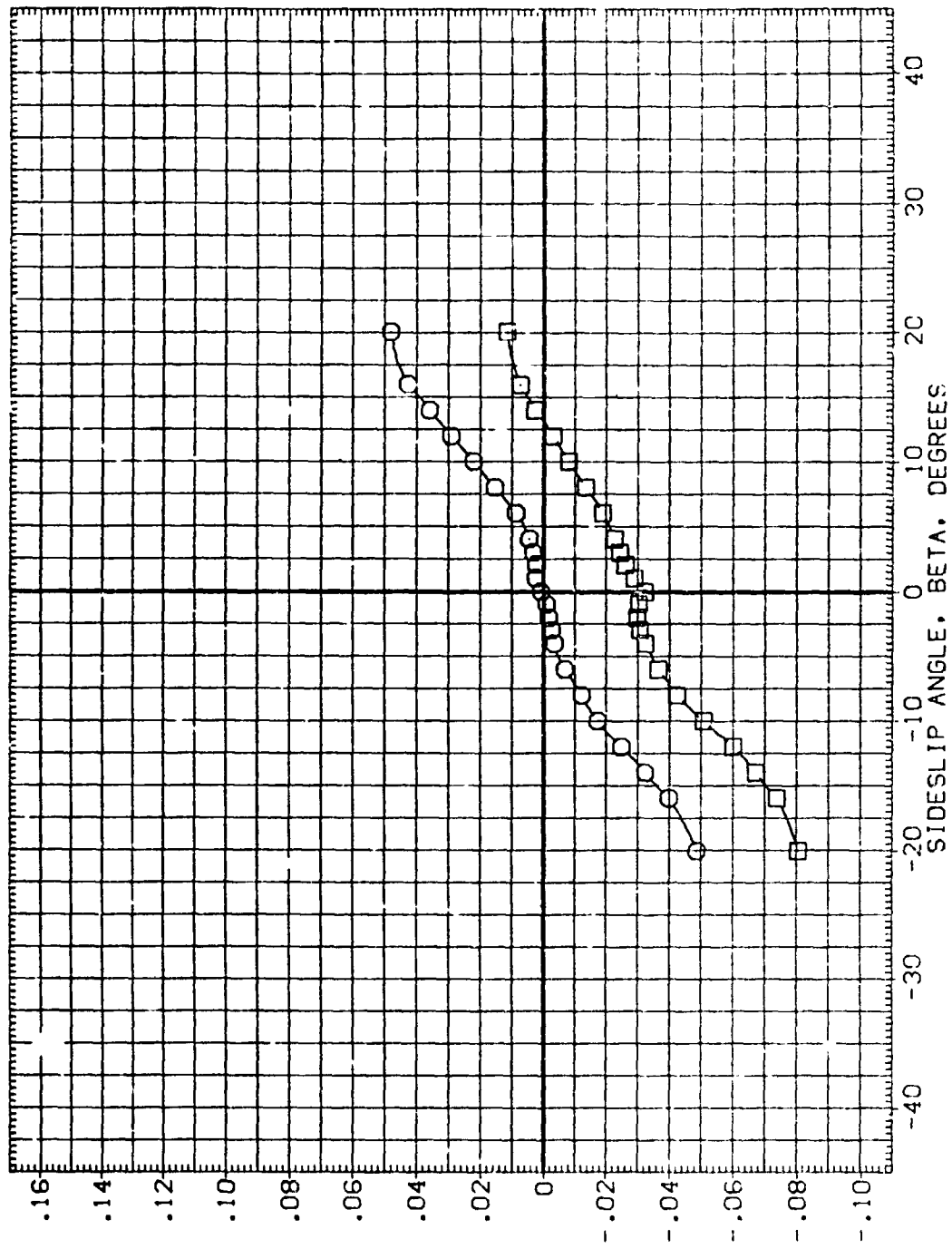


FIG.31 RUDDER EFFECTIVENESS, CONF.1, ALPHA=12.79, ELEVATORS=0.0

(A)Q = 36.34

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT70AT71	T28.1	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0026)	CA11UWAL1146(EXT)K1H15.6V9.4	AT70AT71	T28.1	6.380	-1.880	.000	.000	SREF 5500.0000 SO.FT.
(RG0025)	CA11UWAL1146(EXT)K1H15.6V9.4			6.380	-1.880	25.000	25.000	LREF 327.7800 IN.
								BREF 2348.0000 IN.
								XMRP 1339.9100 IN. XC
								YMRP .0000 IN. YC
								ZMRP 190.7500 IN. ZC
								SCALE .0400

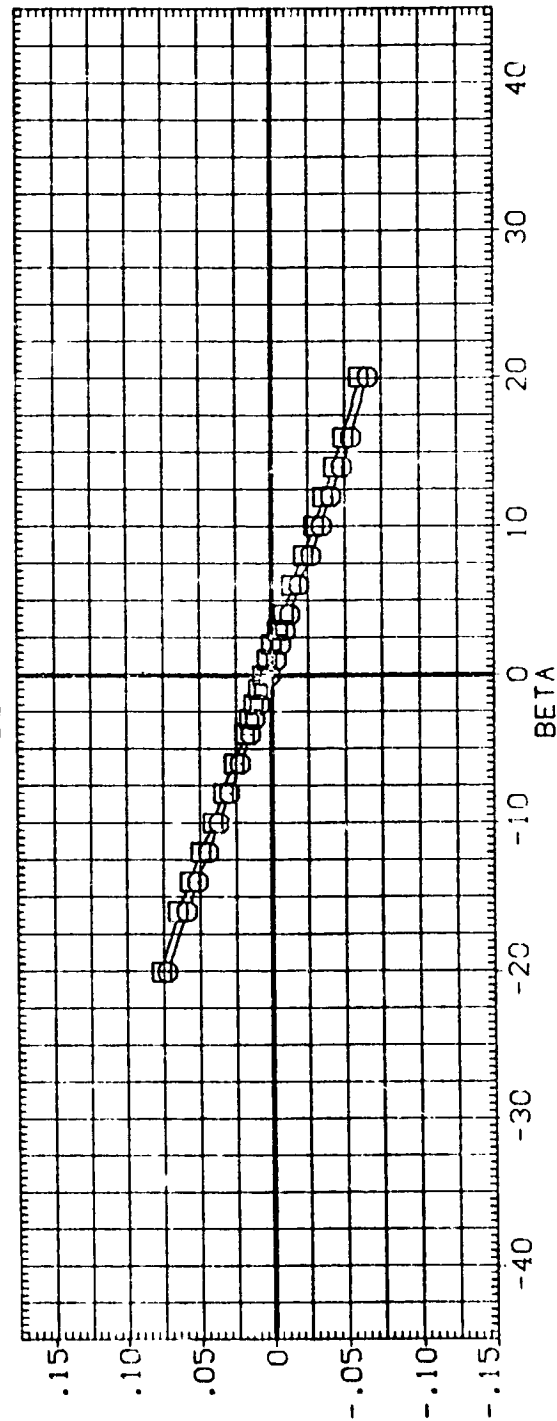
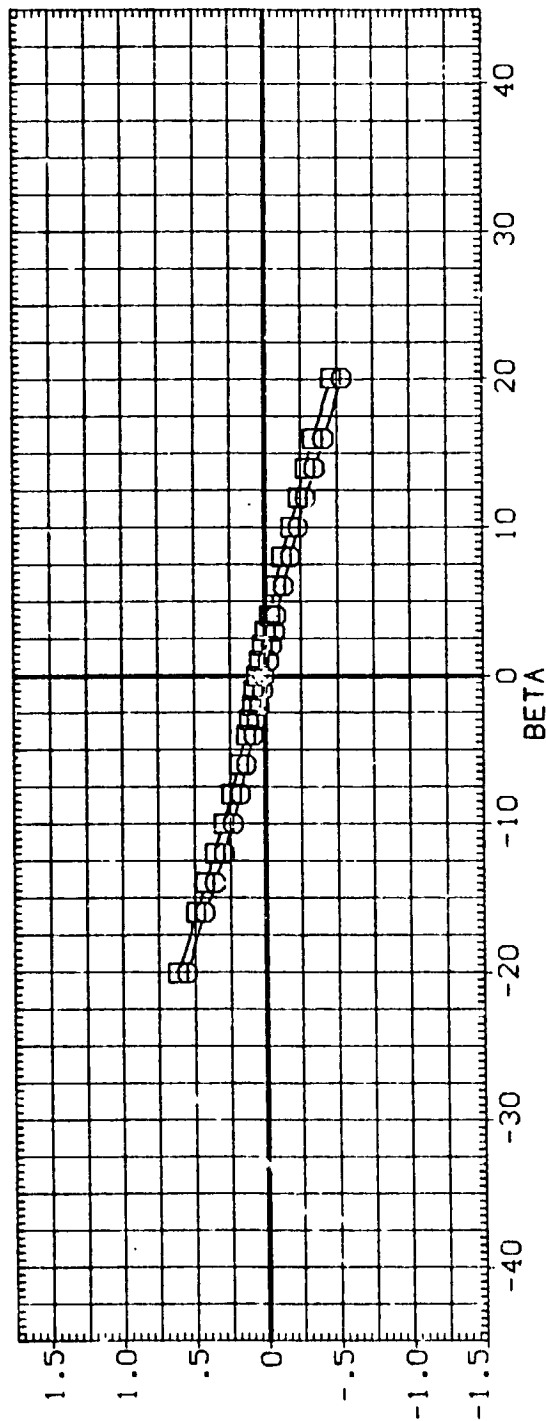


FIG.32 RUDDER EFFECTIVENESS, CONF.1(200 SO.FT. HTF), ALPHA=6.38, ELEVATORS=0.0

(A)3 = 36.24

DATA SET SYMBOL (RG0026)  
 (RG0025)

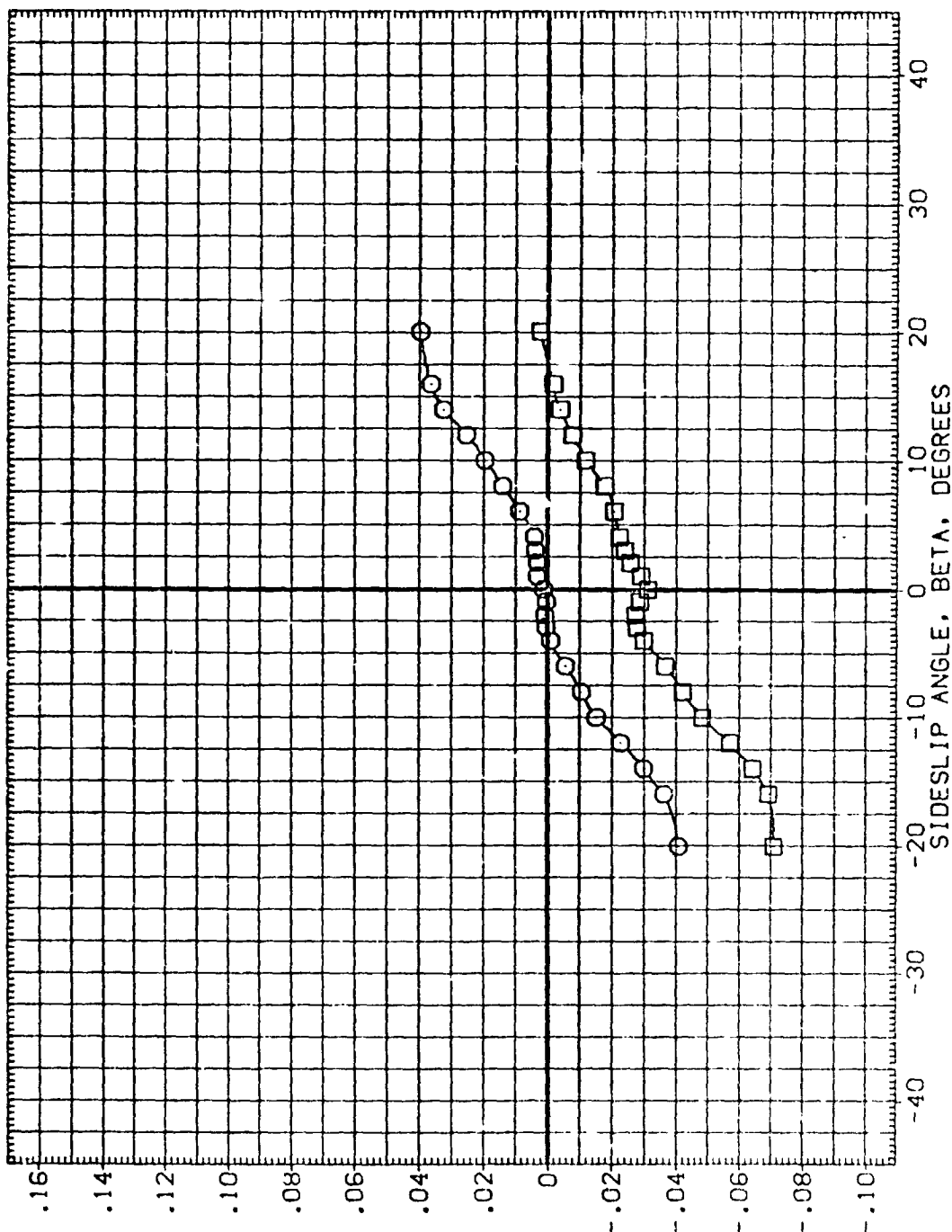
CONFIGURATION DESCRIPTION  
 CA110VAL114S(EXT)KIH15.6V9.4  
 CA110VAL114S(EXT)KIH15.6V9.4

AT70AT71 T28.1  
 AT70AT71 T28.1

ALPHAW STAB  
 6.380 -1.880  
 6.380 -1.880

RUD-L RUD-J  
 .000 .000  
 25.000 25.000

REFERENCE INFORMATION  
 SREF 5500.0000 SQ.FT.  
 LREF 327.7800 IN.  
 BREF 2348.0000 IN.  
 XMRP 1338.9100 IN. XC  
 YMRP 190.7500 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0400



YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

FIG.32 RUDDER EFFECTIVENESS, CONF.1(200 SQ.FT. HTF), ALPHAW=6.38, ELEVATORS=0.0

(A)Q = 36.24

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RSC029)	CALLUVAL1146(EXT)KIH15.6V9.4	6.380	-1.880	.000	.000	SREF 5500.0000 SQ.FT.
(RSC024)	CALLUVAL1146(EXT)KIH15.6V9.4	6.330	-1.880	25.000	25.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

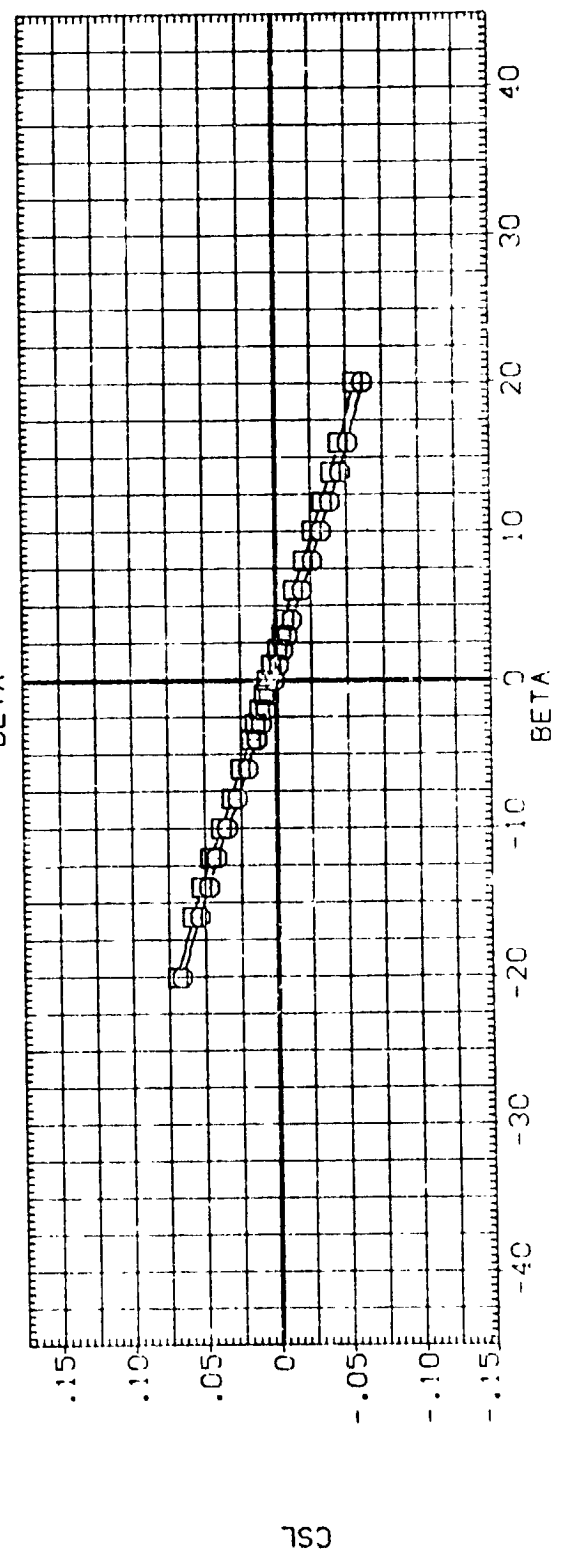
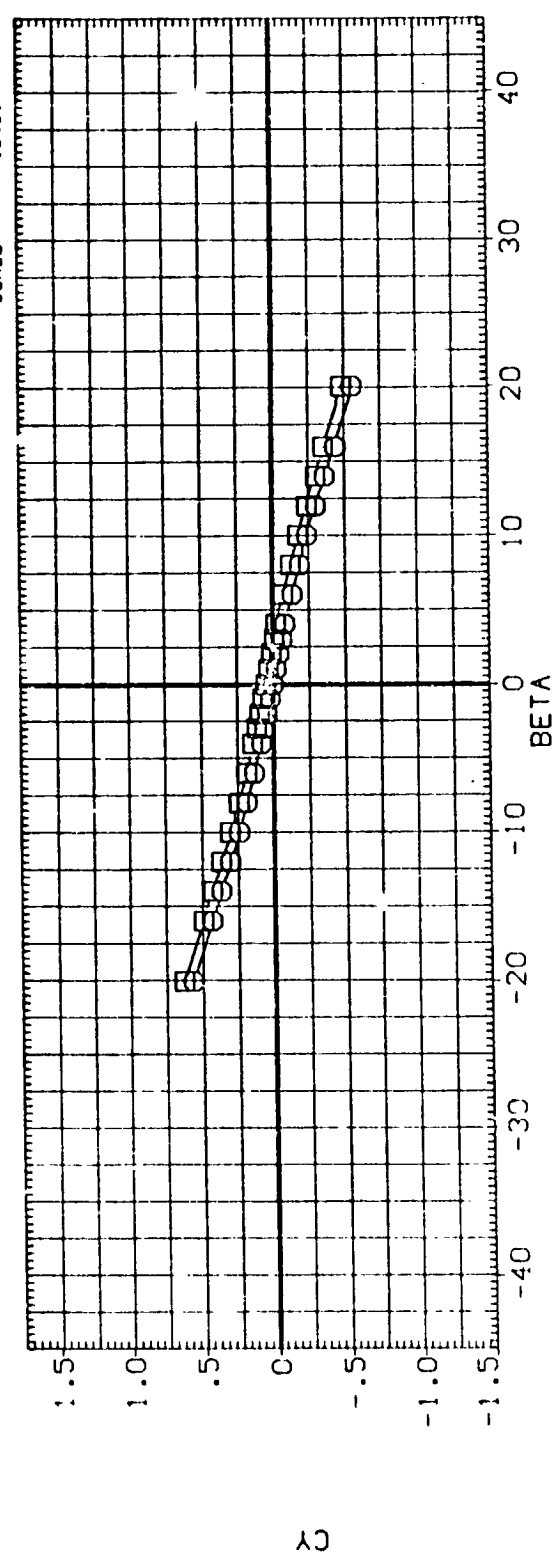


FIG.33 RUDDER EFFECTIVENESS. CONF.1A, ALPHA=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(R60029)	CALL10WAL1146(EXT)KIHI5.6V9.4	6.380	-1.880	.000	.000	SREF 5500.0000 SO.FT.
(R65024)	CALL10WAL1146(EXT)KIHI5.6V9.4	6.380	-1.880	25.000	25.000	LREF 327.2800 IN.
						BREF 2348.0000 IN.
						YMRP 1339.9100 IN. XC
						ZMRP 190.7500 IN. YC
						SCALE .0400

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

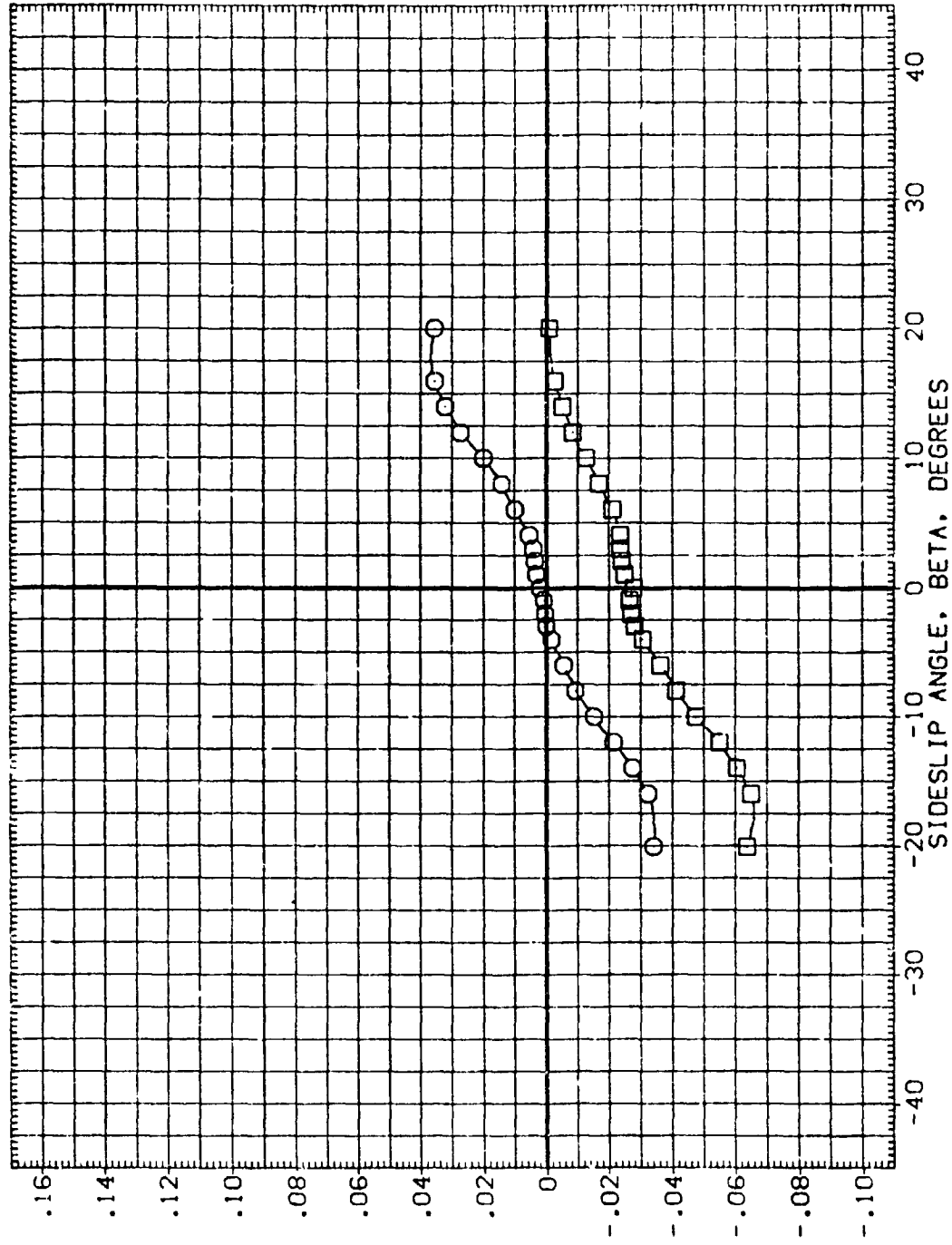


FIG.33 RUDDER EFFECTIVENESS, CONF.1A, ALPHA=6.38, ELEVATORS=0.0

(A)0 = 36.23

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0069)	CA11UVAL1146(EXT)K1H15.1	6.380	-1.920	.000	.000	SRF 5500.0000 SQ.FT.
(RG0068)	CA11UVAL1146(EXT)K1H15.1V9.1	6.380	-1.920	.000	.000	LRF 377.2800 IN.
(RG0067)	CA11UVAL1146(EXT)K1H15.6V9.1	6.380	-1.920	.000	.000	BRF 2348.0000 IN.
(RG0066)	CA11UVAL1146(EXT)K1 H15.11V9.4	6.380	-1.920	.000	.000	XMRP 1339.5100 IN. XC
(RG0064)	CA11UVAL1146(EXT)K1 H15.12V9.4	6.380	-1.920	.000	.000	ZMRP 190.7500 IN. ZC
						SCALE .0400

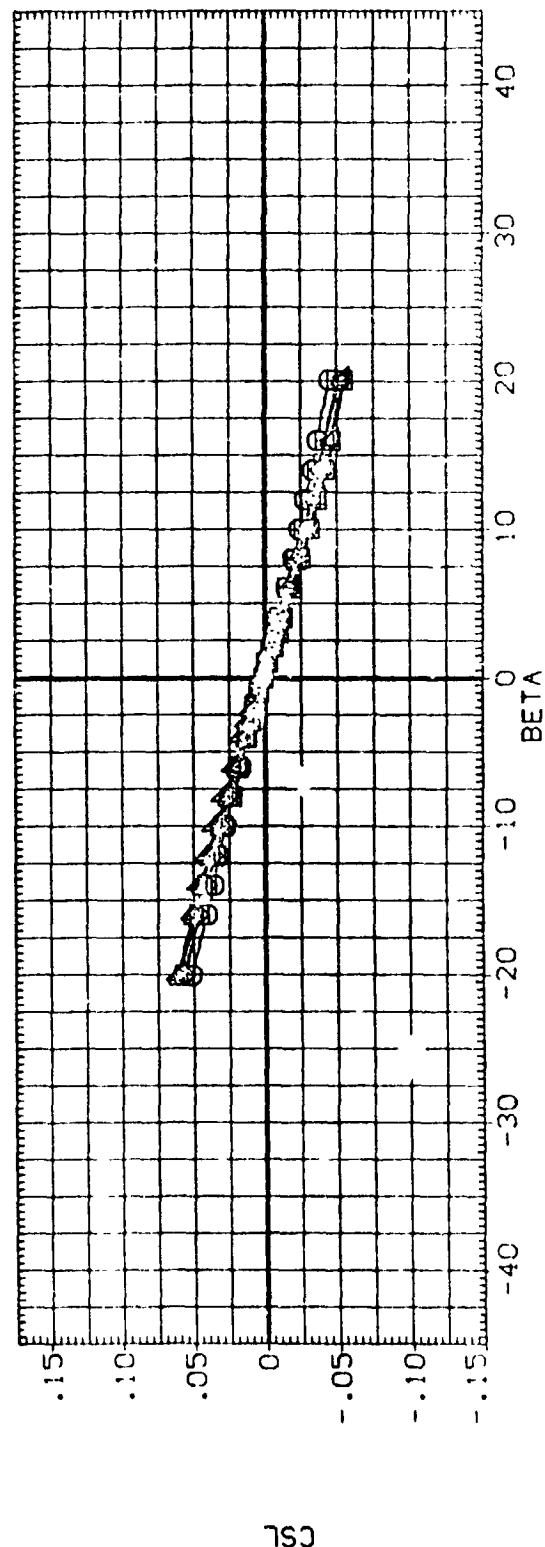
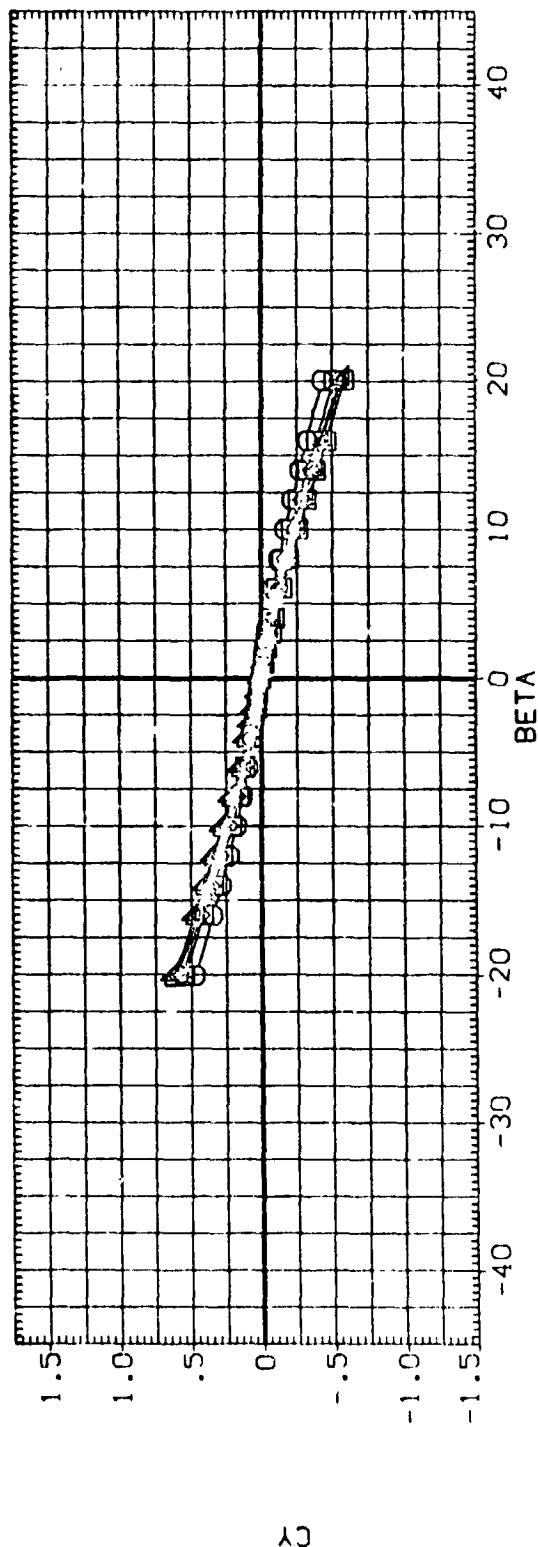


FIG.34 EFFECT OF VERTICAL FINS, CONF.3A, ALPHA=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT83AT80	T28.1	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION:	SO.FT.
(RG0069)	CA11UVAL1146(EXT)K1H15.1	AT83AT80	T28.1	6.380	-1.920	.000	.000	SREF	5500.0000
(RG0068)	CA11UVAL1146(EXT)K1H15.1V9.1	AT83AT80	T28.1	6.380	-1.920	.000	.000	LREF	327.7800
(RG0067)	CA11UVAL1146(EXT)K1H15.6V9.1	AT83AT80	T28.1	6.380	-1.920	.000	.000	BREF	2348.0000
(RG0066)	CA11UVAL1146(EXT)K1 H15.11V9.4	AT83AT80	T28.1	6.380	-1.920	.000	.000	XMRP	1339.9100
(RG0064)	CA11UVAL1146(EXT)K1 H15.12V9.4	AT83AT80	T28.1	6.380	-1.920	.000	.000	YMRP	.0000
								ZMRP	190.7500
								SCALE	.0400

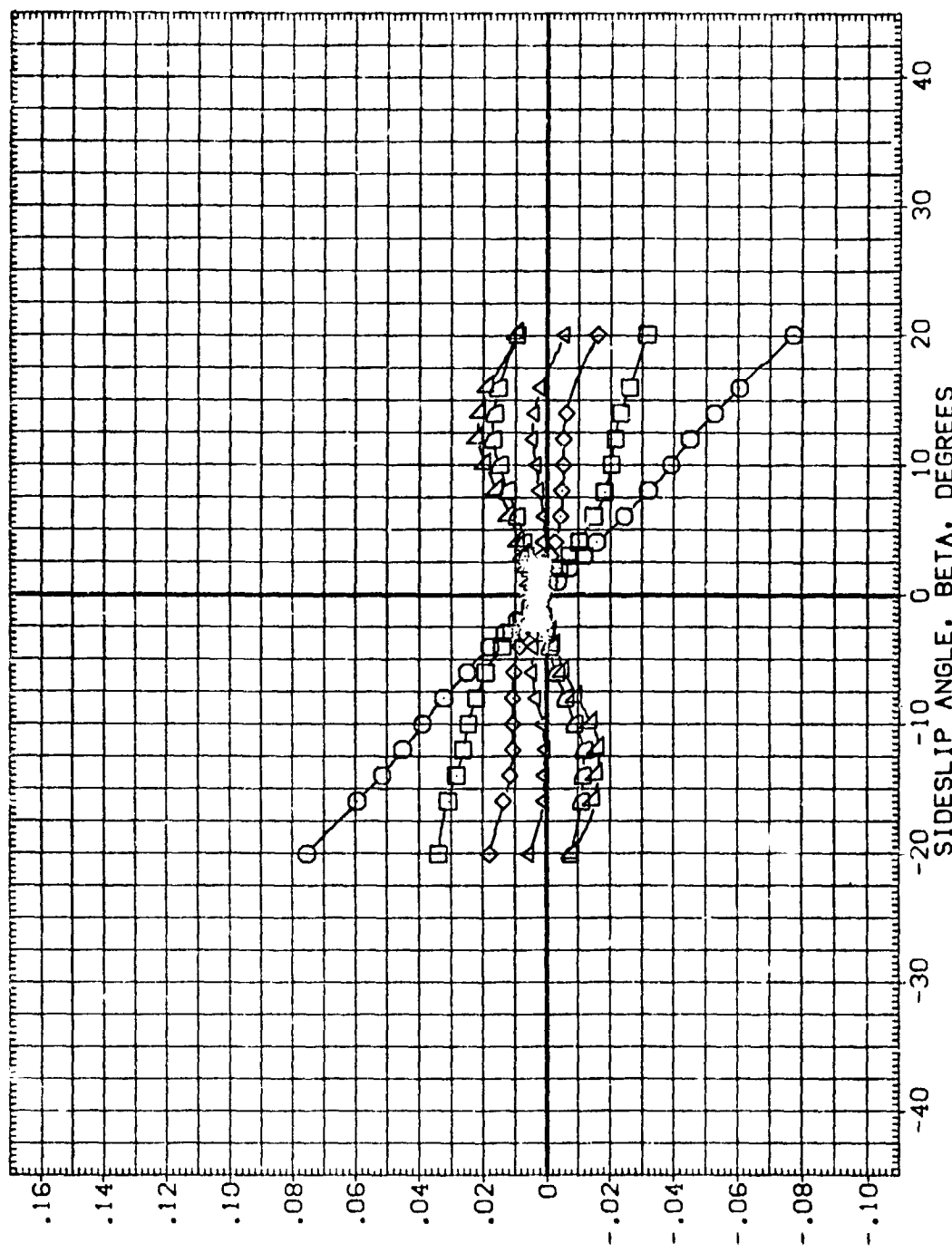


FIG.34 EFFECT OF VERTICAL FINS, CONF.3A, ALPHA=6.38, ELEVATORS=0.0

(A)0 = 36.17

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT83AT80	T28.1	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0061)	CALLUWAL1146(EXT)KIM15.6V9.4	AT83AT80	T28.1	6.380	-1.920	.000	.000	SREF 5500.0000 50.FT.
(RG0063)	CALLUWAL1146(EXT)KIM15.6V9.4	AT83AT80	T28.1	6.380	-1.920	25.000	25.000	LREF 327.7800 IN.
								BREF 2348.0000 IN.
								XMRP 1339.9100 IN. XC
								YMRP .0000 IN. YC
								ZMRP 190.7500 IN. ZC
								SCALE .0400

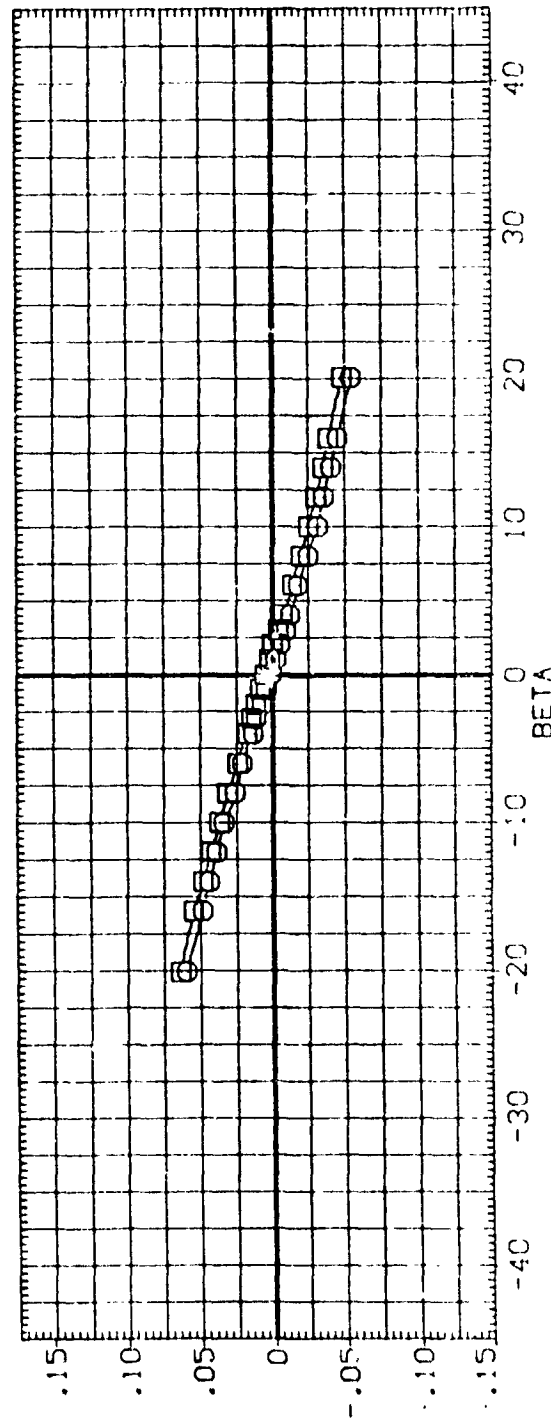
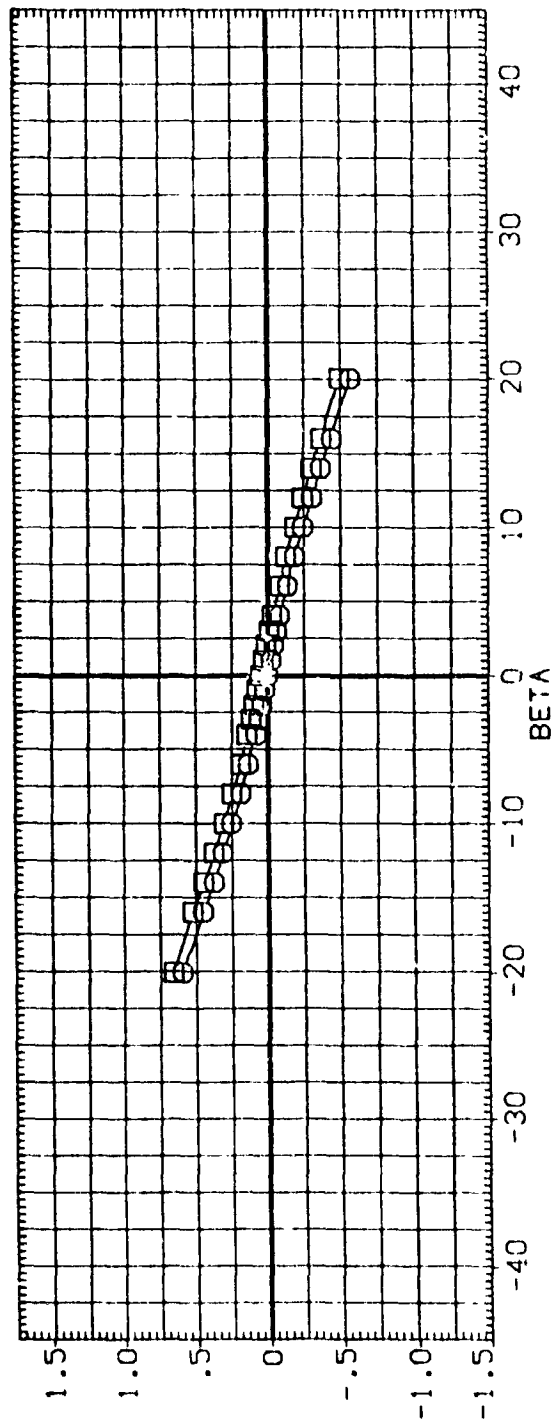


FIG.35 RUDDER EFFECTIVENESS, CONF.3A, ALPHA=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0061)	CALLUWAL1146(EXT)K1H15.6V9.4	6.380	-1.920	25.000	.000	SREF 5500.0000 SQ.FT.
(RG0063)	CALLUWAL1146(EXT)K1H15.6V9.4	6.380	-1.920	25.000	.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XPRP 1339.9100 IN. XC
						YPRP .0000 IN. YC
						ZPRP 190.7500 IN. ZC
						SCALE .0400

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

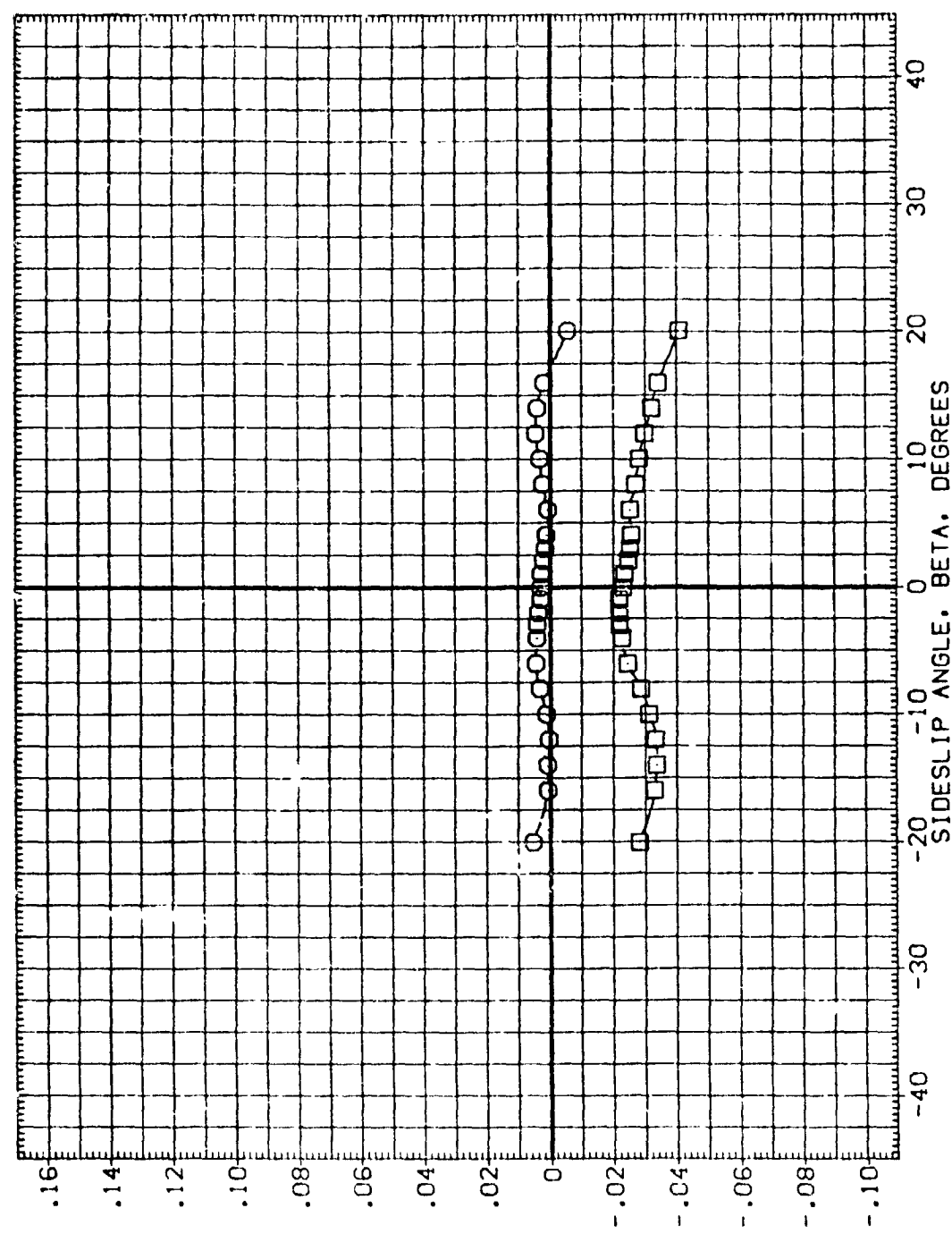


FIG.35 RUDDER EFFECTIVENESS. CONF.3A, ALPHA=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0118)	CALLUWAL1146(EXT)K1H1S.1	2.080	-2.000	.000	.000	SREF 5500.0000 SO.FT.
(RG0117)	CALLUWAL1146(EXT)K1H1S.1V9.1C1	2.080	-2.000	.000	.000	LREF 327.7800 IN.
(RG0112)	CALLUWAL1146(EXT)K1H1S.6V9.1C1	2.080	-2.000	.000	.000	BREF 2348.0000 IN.
(RG0100)	CALLUWAL1146(EXT)K1H1S.6V9.1C1V11	2.080	-1.960	.000	.000	XMRP 1339.9100 IN. XC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

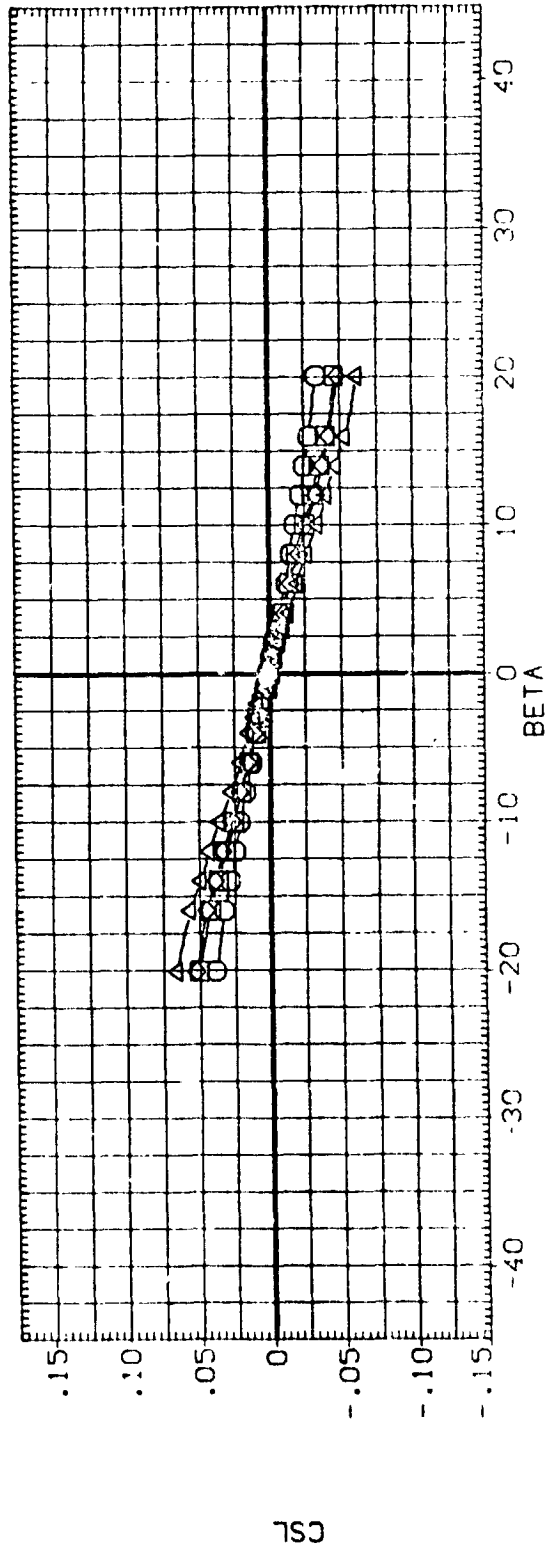
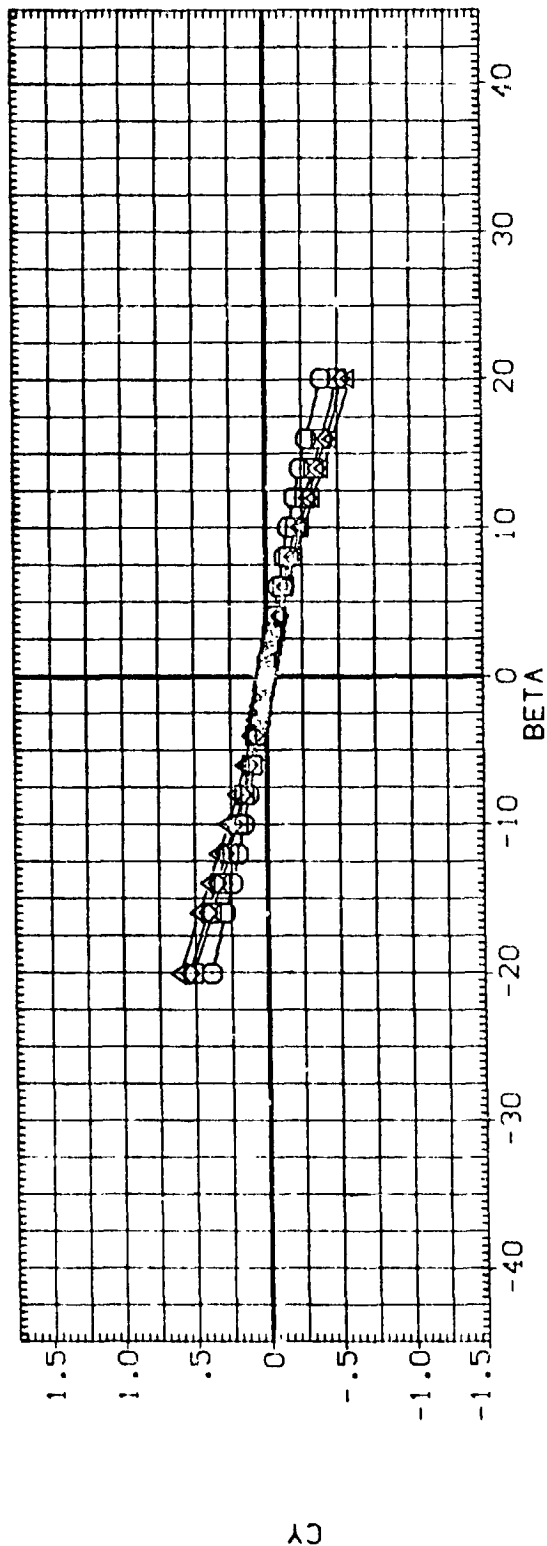


FIG.36 EFFECT OF VERTICAL FINS. CONF.5. ALPHA=2.08, ELEVATORS=0.0

(A)2 = 36.19

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0118)	CALLUVAL1146(EXT)KIH15.1	2.080	-2.000	.000	.000	SREF \$500.0000 SQ.F1.
(RG0117)	CALLUVAL1146(EXT)KIH15.1V9.1C1	2.080	-2.000	.000	.000	LREF 327.7800 IN.
(RG0112)	CALLUVAL1146(EXT)KIH15.6V9.1C1	2.080	-2.000	.000	.000	BREF 2348.0000 IN.
(RG0100)	CALLUVAL1146(EXT)KIH15.6V9.1C1V11	2.080	-1.960	.000	.000	XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

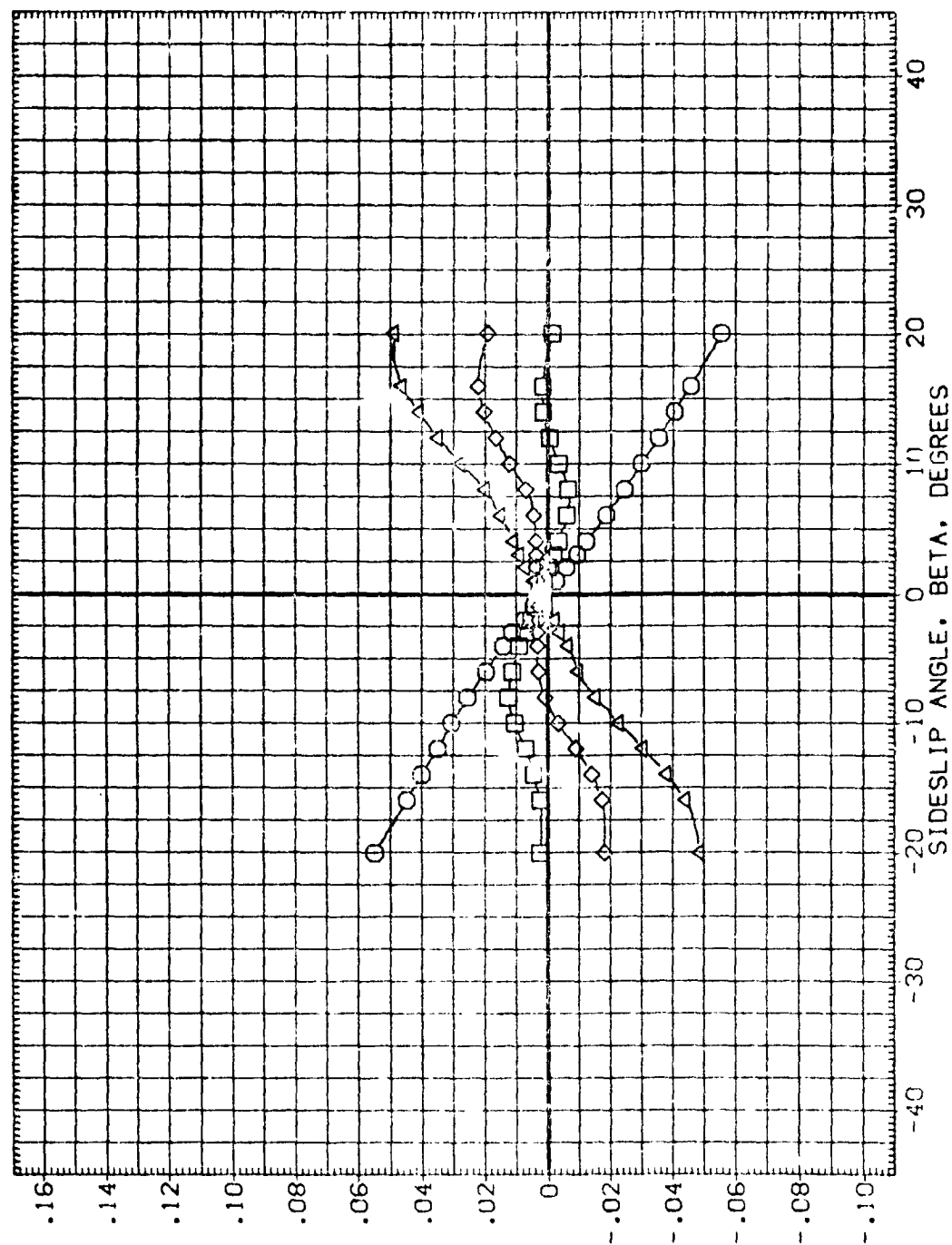


FIG.36 EFFECT OF VERTICAL FINS, CONF.5, ALPHA=2.08, ELEVATORS=0.0

(A) = 36.19

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUO-U	RUO-L	REFERENCE INFORMATION
(R00119)	CA11UWAL1146(EXT)KIH15.1	6.380	-2.000	.000	.000	SAFE 5500.0000 SO.FT.
(R00116)	CA11UWAL1146(EXT)KIH15.1V9.1C1	6.380	-2.000	.000	.000	LREF 327.7800 IN.
(R00113)	CA11UWAL1146(EXT)KIH15.6V9.1C1	6.380	-2.000	.000	.000	BREF 2348.0000 IN.
(R00101)	CA11UWAL1146(EXT)KIH15.1C1V11	6.380	-1.960	.000	.000	XMRP 1339.9100 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

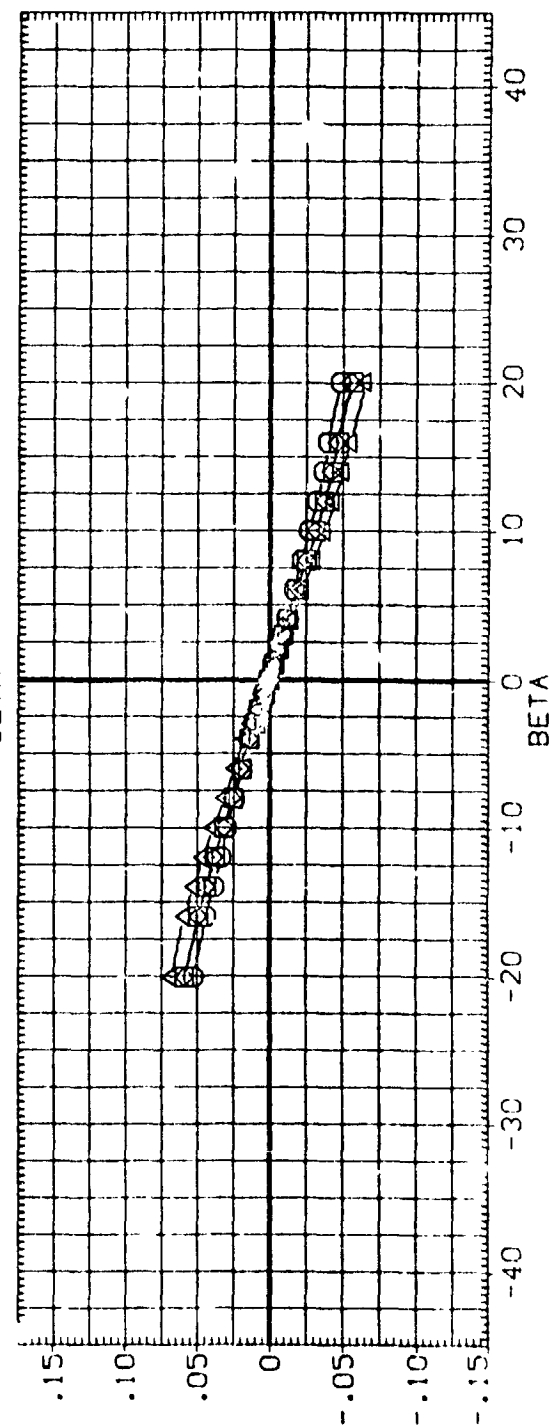
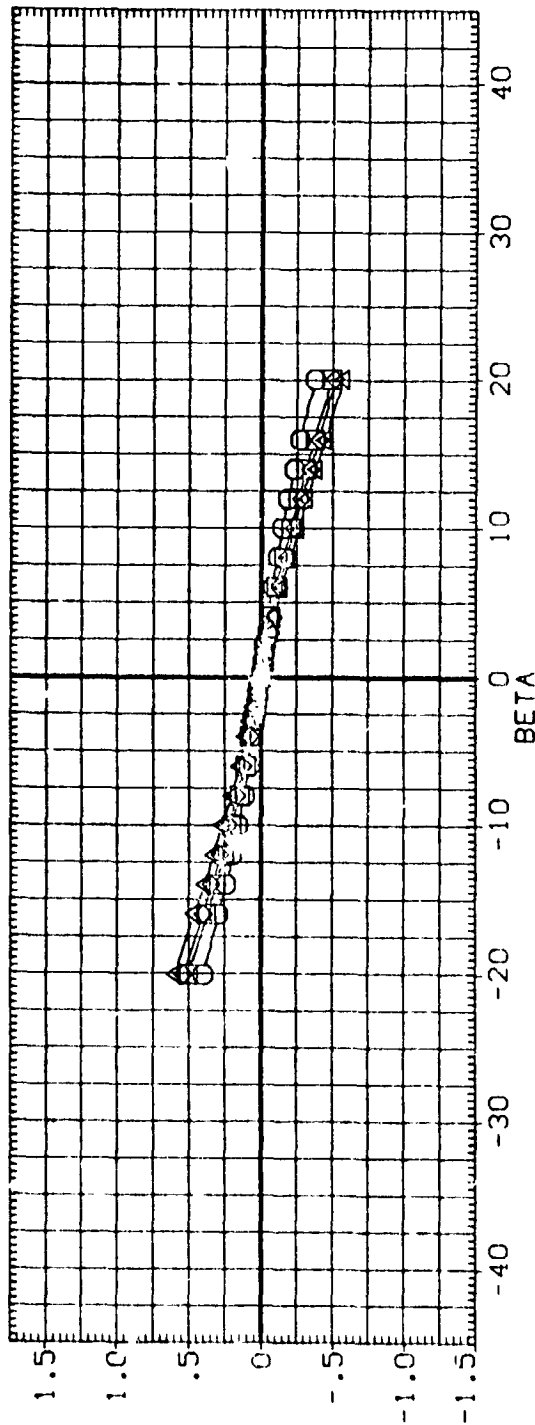


FIG.37 EFFECT OF VERTICAL FINS, CONF.5, ALPHA=6.38, ELEVATORS=0.0

(A) = 36.21

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0119)	CA11UWAL1146(EXT)KIH15.1	6.380	-2.000	.000	.000	SREF 5500.0000 SQ.FT.
(RG0116)	CA11UWAL1146(EXT)KIH15.1V9.1C1	6.380	-2.000	.000	.000	LREF 227.7800 IN.
(RG0113)	CA11UWAL1146(EXT)KIH15.6V9.1C1	6.380	-2.000	.000	.000	BREF 2348.0500 IN.
(RG0101)	CA11UWAL1146(EXT)KIH15.6V9.1C1V11	6.380	-1.960	.000	.000	XMRP 1339.9100 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

YAWING MOMENT COEFFICIENT, C<sub>LM</sub>, (STABILITY AXIS)

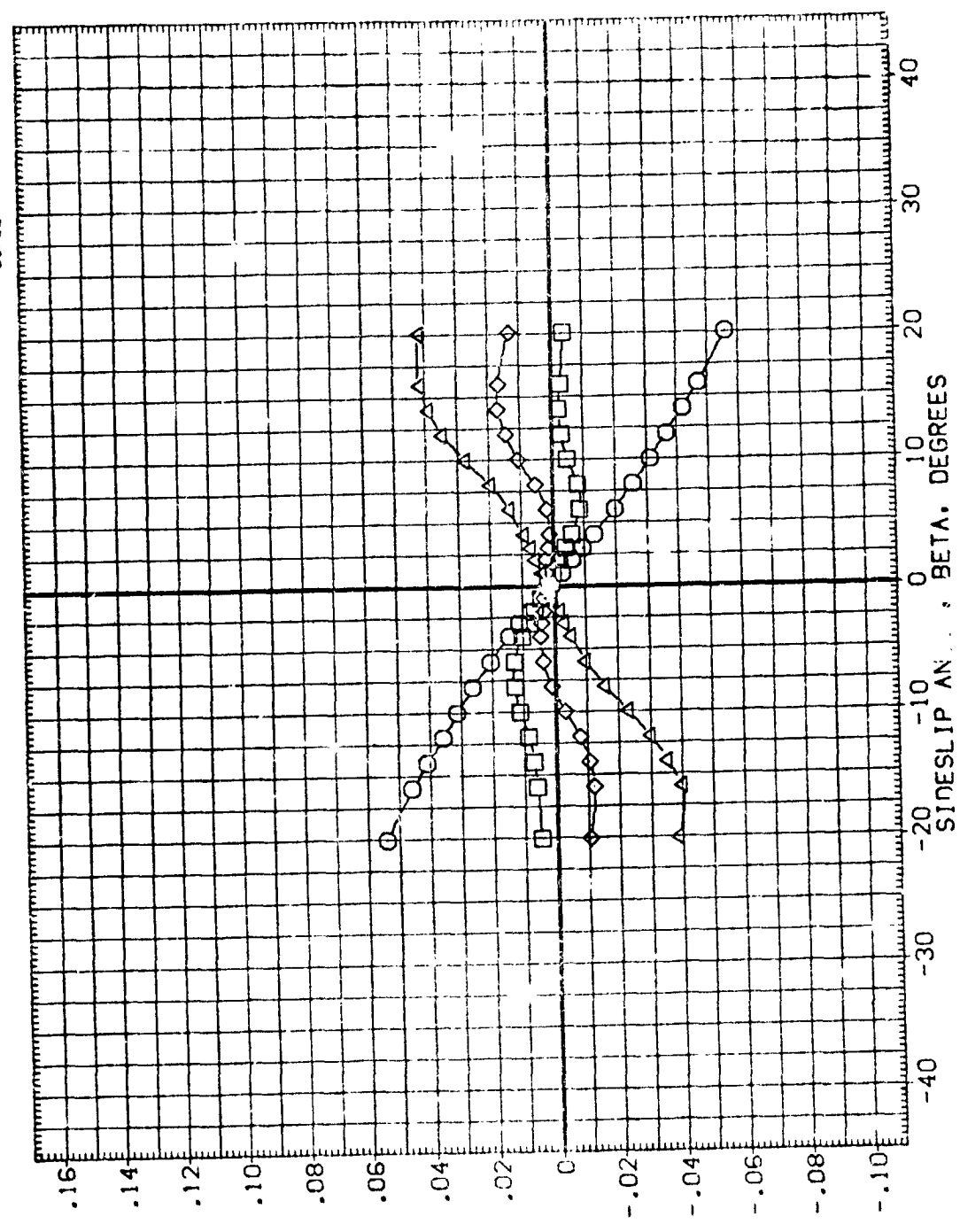


FIG.37 EFFECT OF VERTICAL FINS, CONF.5, ALPHA=6.38, ELEVATORS=0.0

(A) = 36.21

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0120)	CALLUVAL1146(EXT)KIH15.1	12.790	-2.000	.000	.000	SREF 5500.0000 SQ.FT.
(RG0115)	CALLUVAL1146(EXT)KIH15.1V9.1C1	12.790	-2.000	.000	.000	LREF 327.7800 IN.
(RG0114)	CALLUVAL1146(EXT)KIH15.6V9.1C1	12.790	-2.000	.000	.000	BREF 2348.0000 IN.
(RG0102)	CALLUVAL1146(EXT)KIH15.6V9.1C1V11	12.790	-1.960	.000	.000	XMRP 1339.9100 IN. XC
						YMRP .0600 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

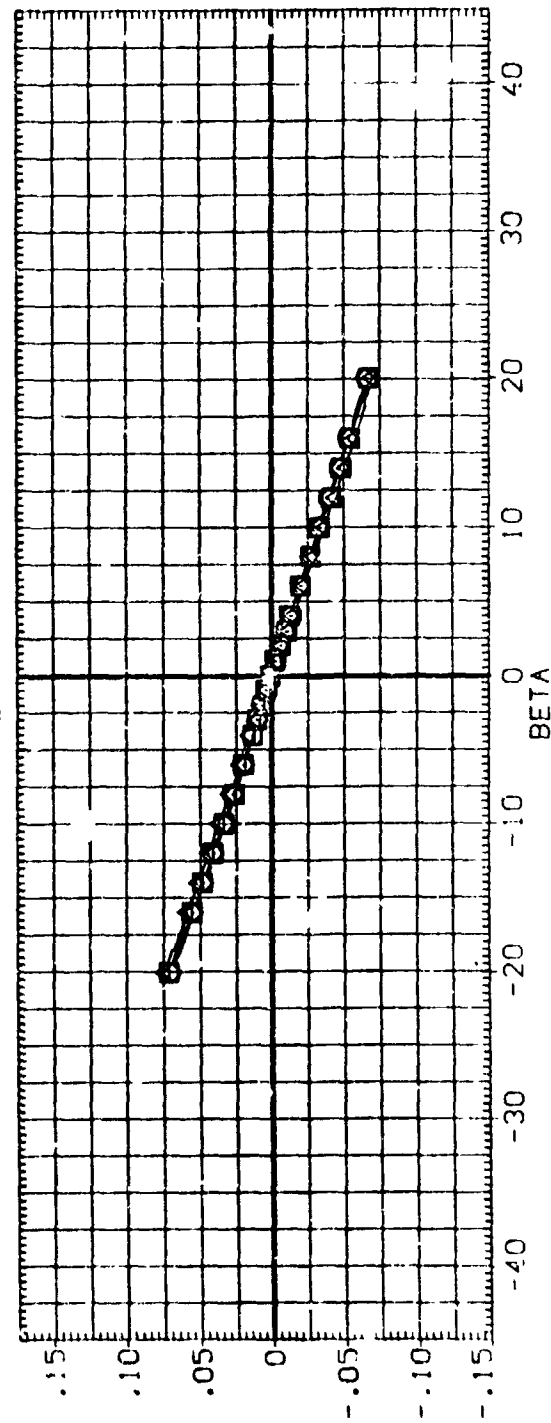
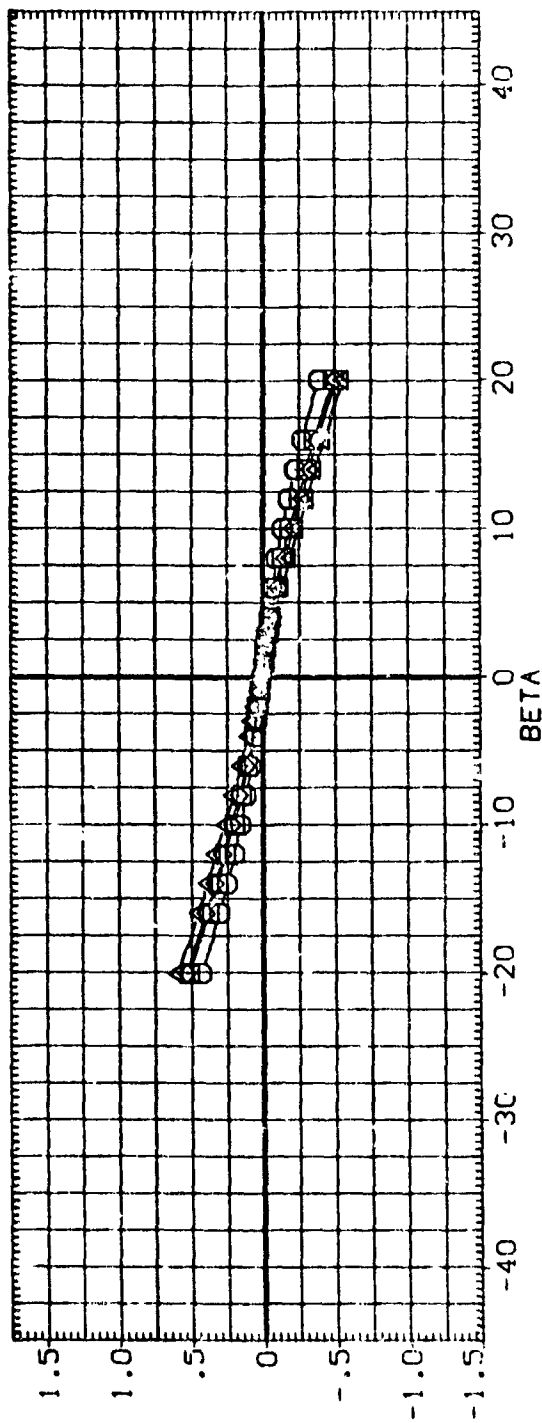


FIG.38 EFFECT OF VERTICAL FINS. CONF.5A. ALPHA=12.79. ELEVATORS 3.0

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0120)	□	CA110VAL1146(EXT)KI15.1	12.750	-2.000	.000	.000	SREF 5500.0000 SO.F.
(RG0115)	○	CA110VAL1146(EXT)KI15.1V3.1C1	12.750	-2.000	.000	.000	LR.F 327.7850 IN.
(RG0114)	◇	CA110VAL1146(EXT)KI15.6V3.1C1	12.750	-2.000	.000	.000	BR.F 2348.0000 IN. XC
(RG0102)	△	CA110VAL1146(EXT)KI15.6V3.1C1V11	12.750	-1.900	.000	.000	YMRP 1339.9100 IN. YC
							ZMRP 190.7500 IN. ZC
							SCALE .0400

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

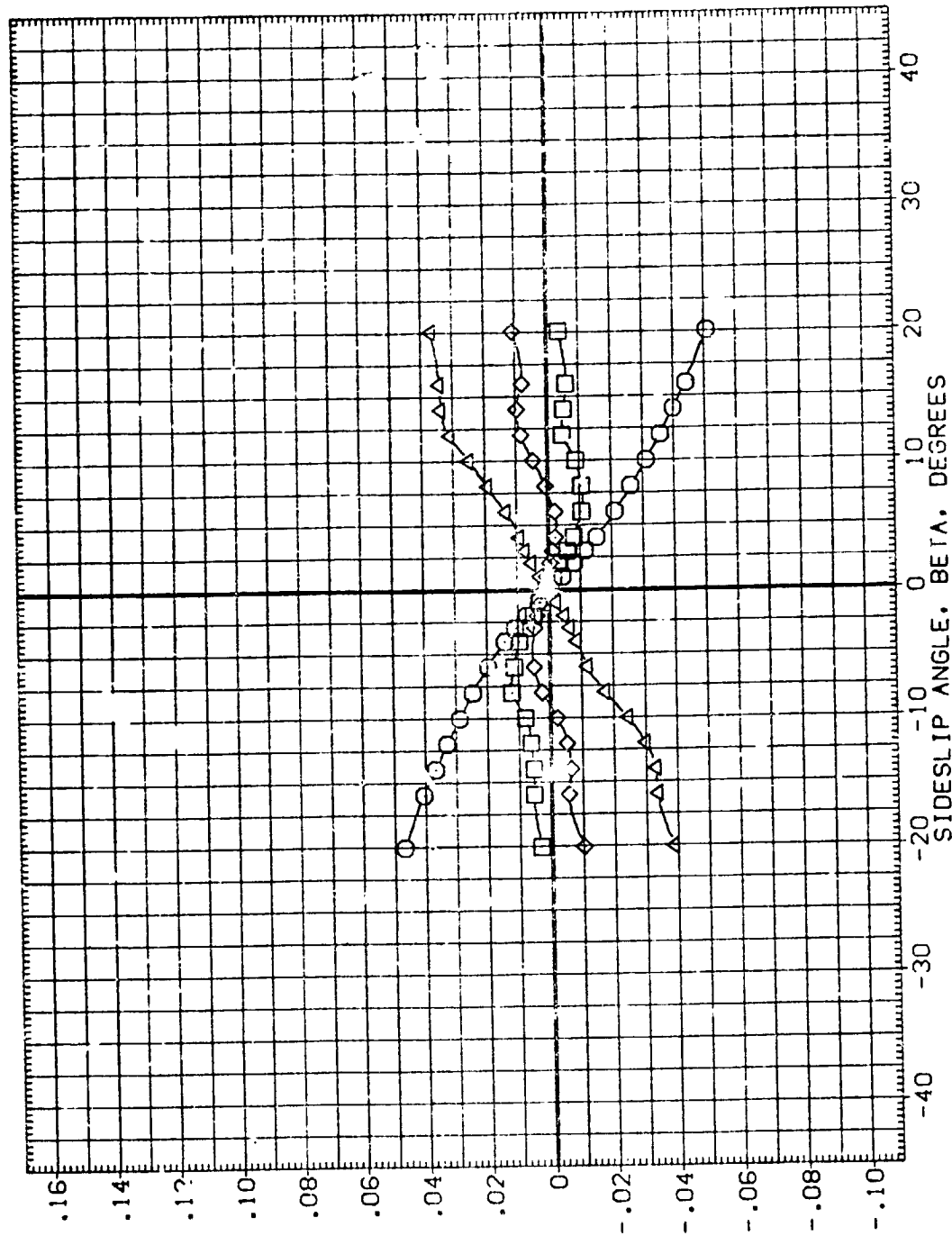


FIG.38 EFFECT OF VERTICAL FINS, CONF.5A, ALPHA=12.79, ELEVATORS=0.0

(A)0 = 36.31

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0047)	CA11UWAL1146(EXT)K1H15.1	6.380	-1.970	.000	.000	SREF 5500.0000 SO.FT.
(RG0046)	CA11UWAL1146(EXT)K1H15.1V9.1C1	6.380	-1.970	.000	.000	LREF 327.7800 IN.
(RG0045)	CA11UWAL1146(EXT)K1H15.6V9.1C1	6.380	-1.970	.000	.000	BREF 2348.0000 IN.
(RG0041)	CA11UWAL1146(EXT)K1H15.6V9.1C1V11	6.380	-1.970	.000	.000	XMRP 1339.9100 IN. XC
(RG0044)	CA11UWAL1146(EXT)K1H15.6V9.1C1V12	6.380	-1.970	.000	.000	YMRP 190.7500 IN. YC
						ZMRP .0400 IN. ZC
						SCALE

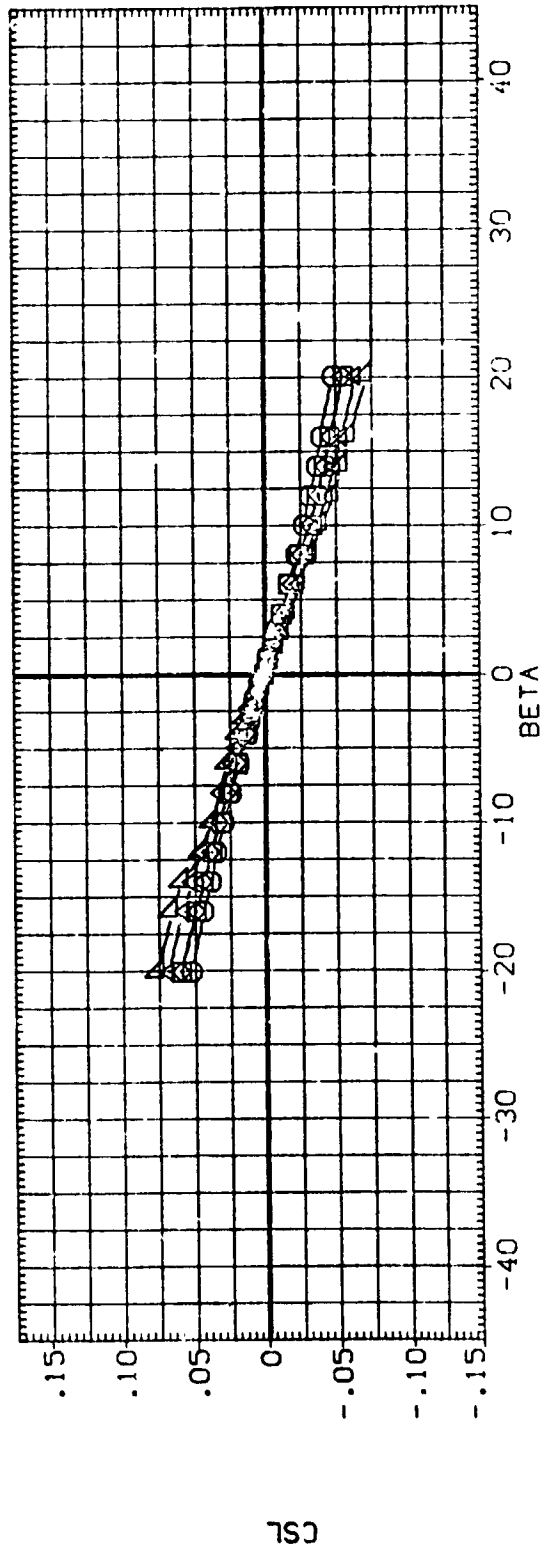
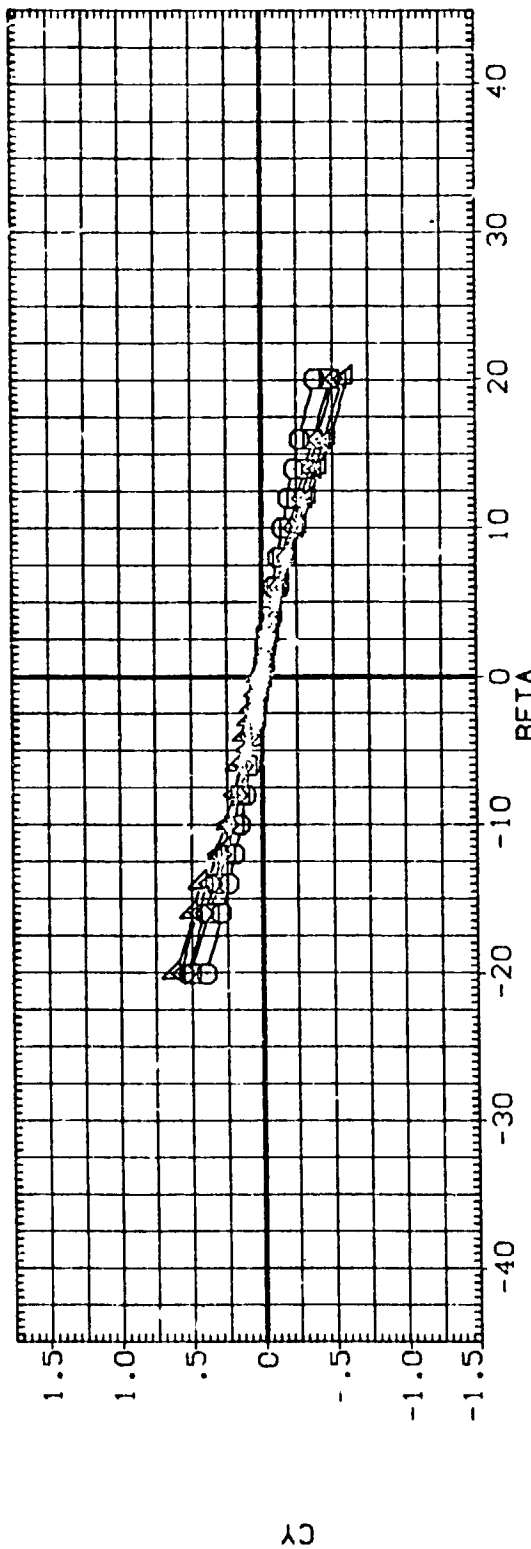


FIG.39 EFFECT OF VERTICAL FINS, CONF.5, ALPHA=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0047)	CA11UVAL1146(EXT)K1H15.1.1V9.1C1	6.380	-1.970	.000	.000	SREF 5500.0000 50.FT.
(RG0046)	CA11UVAL1146(EXT)K1H15.1V9.1C1	6.380	-1.970	.000	.000	LREF 327.7800 IN.
(RG0045)	CA11UVAL1146(EXT)K1H15.6V9.1C1	6.380	-1.970	.000	.000	BREF 2349.0000 IN.
(RG0041)	CA11UVAL1146(EXT)K1H15.6V9.1C1V11	6.380	-1.970	.000	.000	XMRP 1339.9100 IN. XC
(RG0044)	CA11UVAL1146(EXT)K1H15.6V9.1C1V12	6.380	-1.970	.000	.000	ZMRP 190.7500 IN. ZC
						SCALE .0400

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

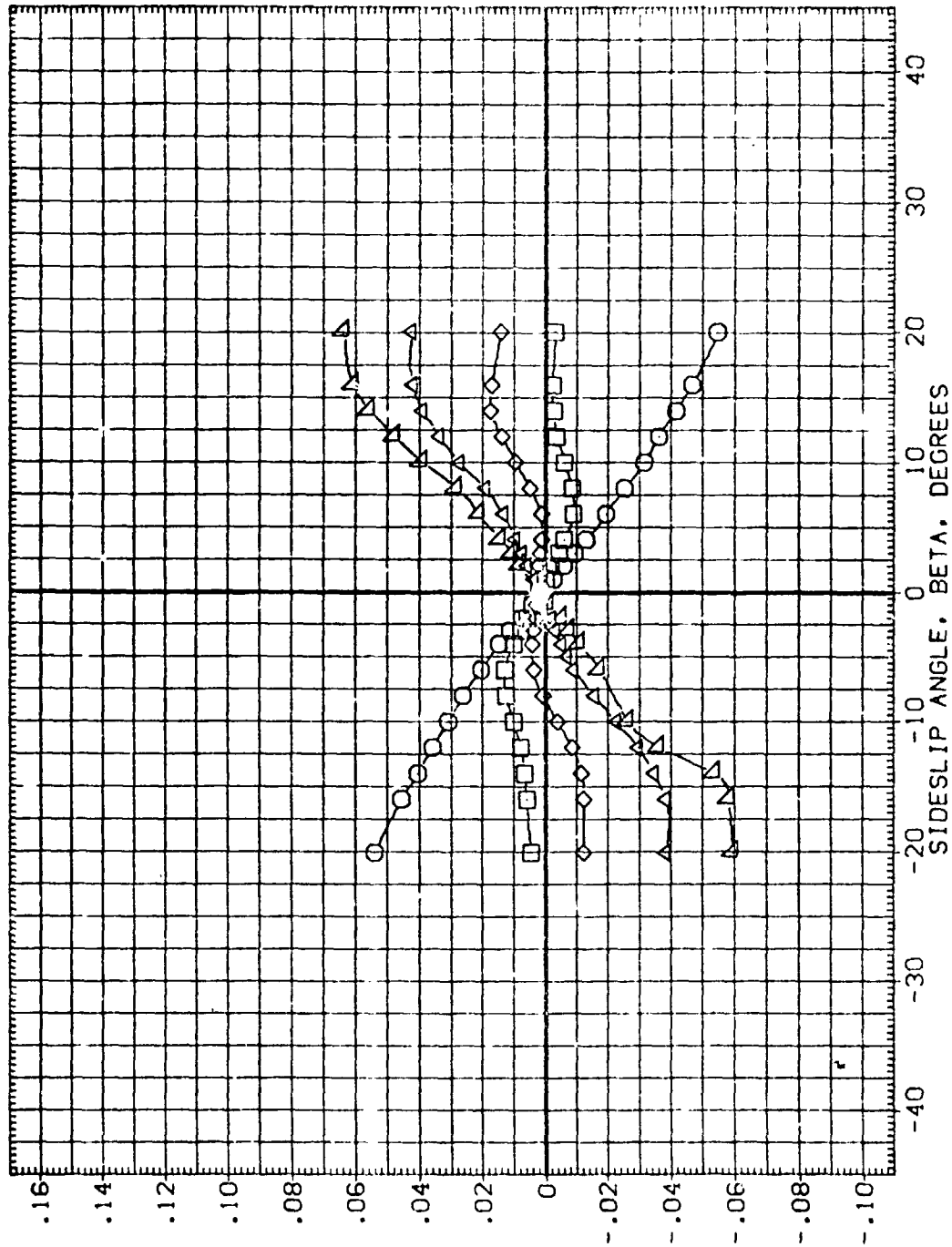


FIG.39 EFFECT OF VERTICAL FINS, CONF.5, ALPHA=6.38, ELEVATORS=0.0

(A)Q = 36.20

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0122)	CA11UVAL1146(EXT)KIH15.1V9.1C2	6.380	-2.000	.000	.000	SREF 5500.0000 SQ.FT.
(RG0123)	CA11UVAL1146(EXT)KIH15.6V9.1C2	6.380	-2.000	.000	.000	LREF 327.7800 IN.
(RG0124)	CA11UVAL1146(EXT)KIH15.6V9.1C2V11	6.380	-2.000	.000	.000	BREF 2348.0000 IN.
(RG0125)	CA11UVAL1146(EXT)KIH15.6V9.1C2V10	6.380	-2.000	.000	.000	XMRP 1338.9100 IN. XC
						ZMRP .0000 IN. ZC
						SCALE 190.7500 .0400

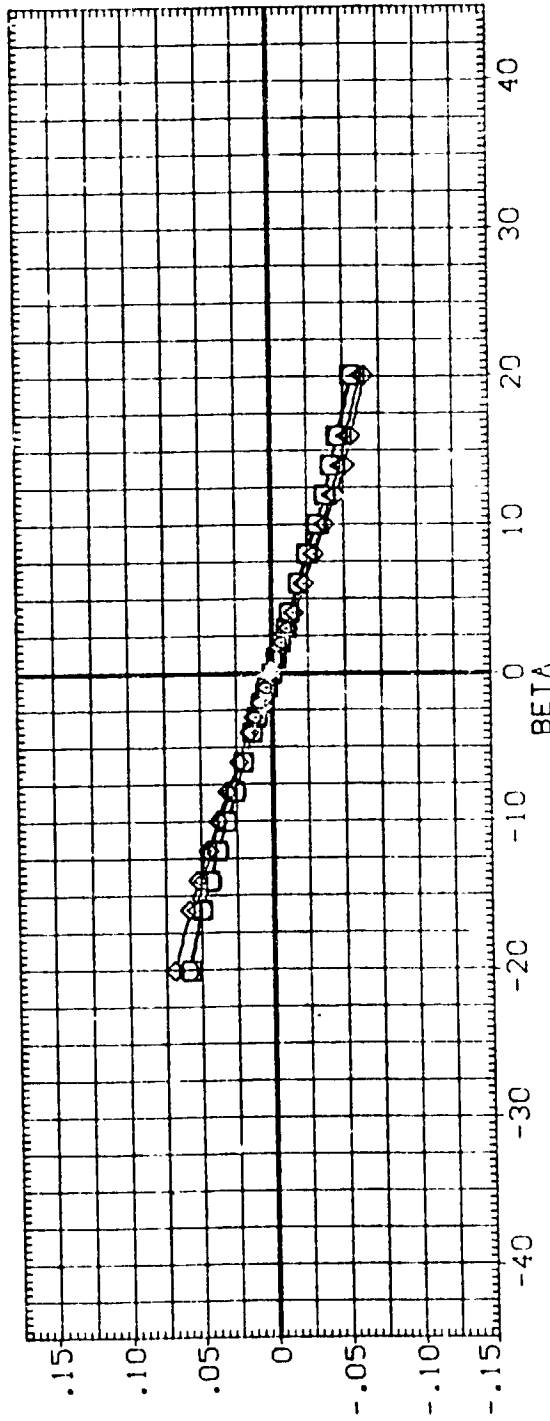
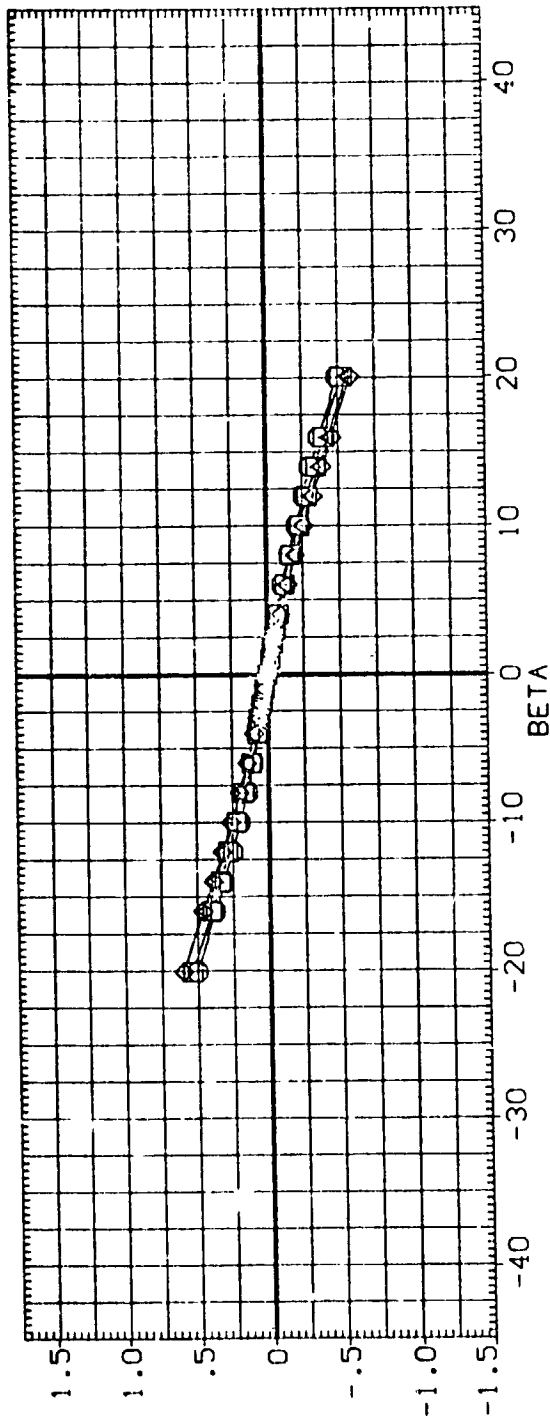


FIG.40 EFFECT OF VERTICAL FINS, CONF.5 (WITH LONG BOOMS), ALPHA=6.38, ELEV.=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(R00122)	CA11UWAL1146(EXT)K1H15.1V9.1C2	6.380	-2.000	.000	.000	SREF 5100.0000 SQ.FT.
(R00123)	CA11UWAL1146(EXT)K1H15.6V9.1C2	6.380	-2.000	.000	.000	LREF 327.7800 IN.
(R00124)	CA11UWAL1146(EXT)K1H15.6V9.1C2V11	6.380	-2.000	.000	.000	BREF 2348.0000 IN. XC
(R00125)	CA11UWAL1146(EXT)K1H15.6V9.1C2V10	6.380	-2.000	.000	.000	XRRP 1339.9100 IN. YC
						ZRRP 190.7500 IN. ZC
						SCALE .0400

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

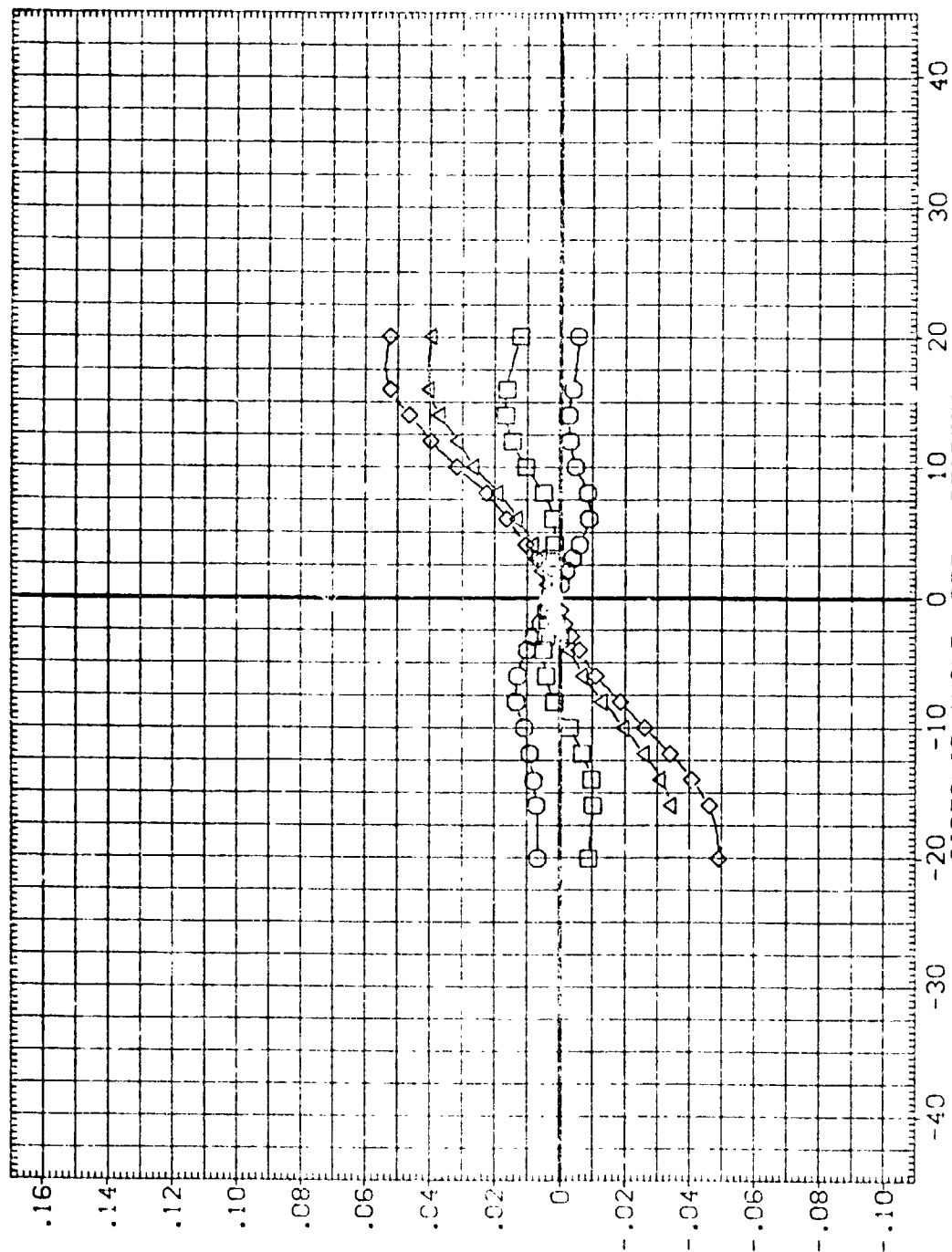


FIG.40 EFFECT OF VERTICAL FINS, CONF.5 (WITH LONG BOOMS), ALPHA=6.38, ELEV.=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0116)	CA11UWALI146(EXT)K1H15.1V9.1C1	6.380	-2.000	.000	.000	SREF 5500.0000 SQ.FT.
(RG0122)	CA11UWALI146(EXT)K1H15.1V9.1C2	6.380	-2.000	.000	.000	LREF 327.7800 IN.
(RG0113)	CA11UWALI146(EXT)K1H15.6V9.1C1	6.380	-2.000	.000	.000	BREF 2348.0000 IN.
(RG0123)	CA11UWALI146(EXT)K1H15.6V9.1C2	6.380	-2.000	.000	.000	XMRP 1339.9100 IN.
(RG0041)	CA11UWALI146(EXT)K1H15.6V9.1C1V11	6.380	-1.970	.000	.000	YMRP .0000 IN.
(RG0040)	CA11UWALI146(EXT)K1H15.6V9.1C2V11	6.380	-1.970	.000	.000	ZMRP 190.7500 IN.
						SCALE .0400

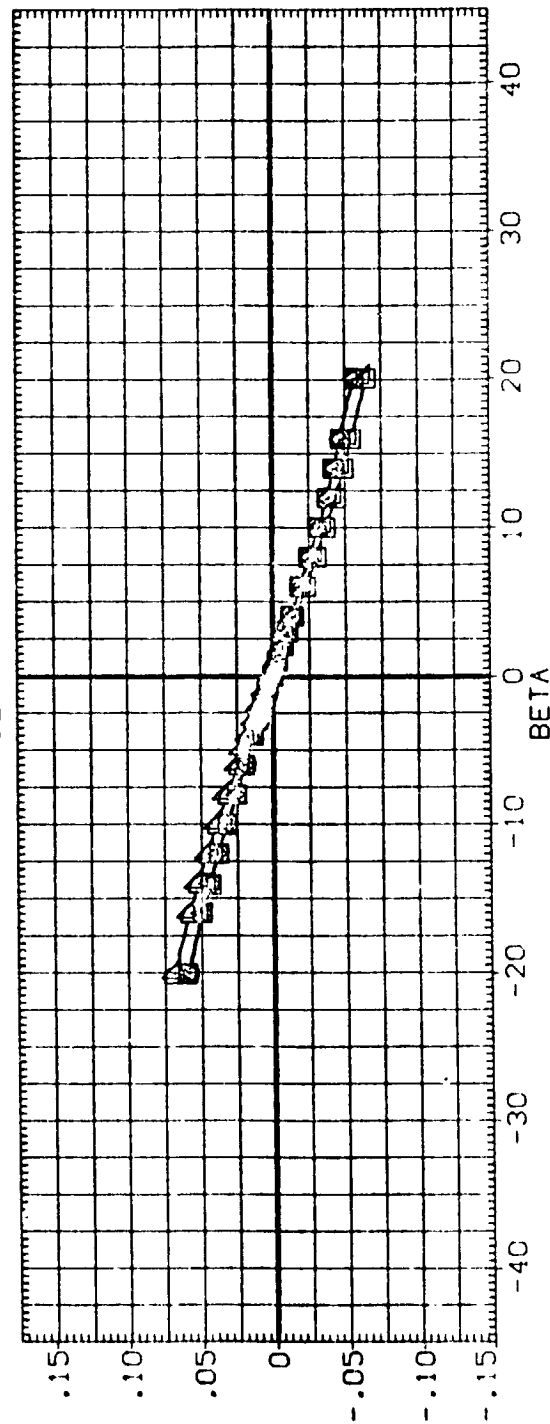
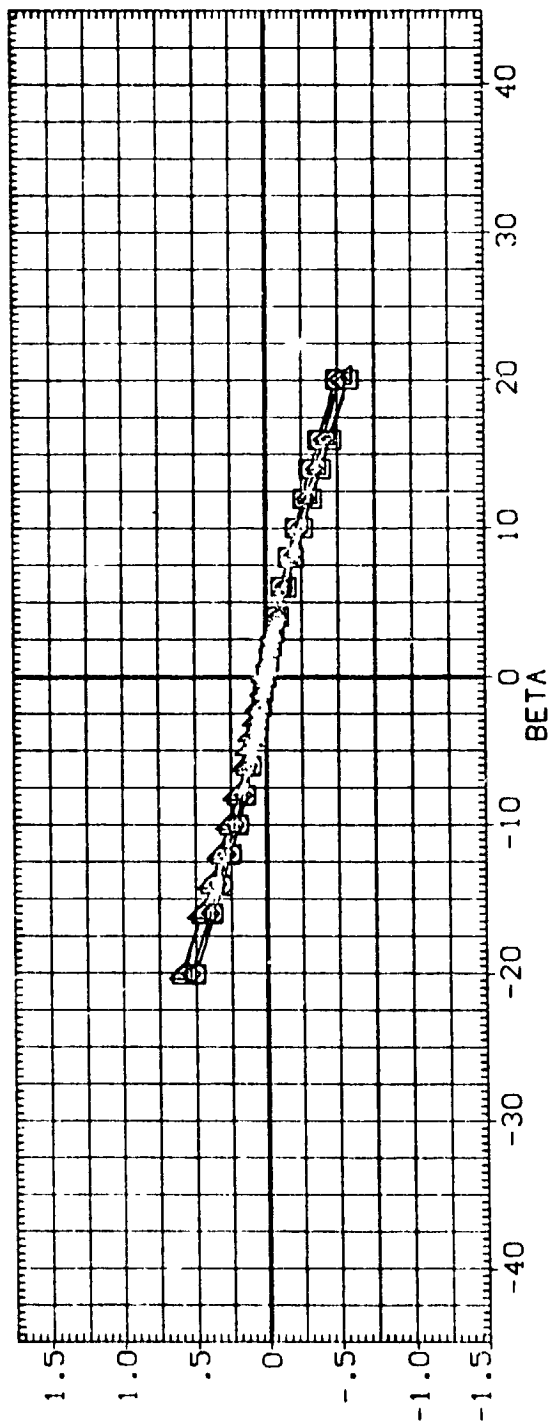


FIG.41 EFFECT OF BOOM LENGTH, CONF.5, ALPHA=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT86AT87 128.1	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0116)	CALLUWAL1146(EXT)KIH15.1V9.1C1	AT86AT87 128.1	6.380	-2.000	.000	.000	SREF 5500.0000 SQ.FT.
(RG0122)	CALLUWAL1146(EXT)KIH15.1V9.1C2	AT86AT87 128.1	6.380	-2.000	.000	.000	LREF 327.7800 IN.
(RG0113)	CALLUWAL1146(EXT)KIH15.6V9.1C1	AT86AT87 128.1	6.380	-2.000	.000	.000	BREF 2348.0000 IN.
(RG0123)	CALLUWAL1146(EXT)KIH15.6V9.1C2	AT86AT87 128.1	6.380	-2.000	.000	.000	XHRP 1339.9100 IN.
(RG0041)	CALLUWAL1146(EXT)KIH15.6V9.1C1V11	AT86AT87 128.1	6.380	-1.970	.000	.000	YHRP .0000 IN.
(RG0040)	CALLUWAL1146(EXT)KIH15.6V9.1C2V11	AT86AT87 128.1	6.380	-1.970	.000	.000	ZHRP 190.7500 IN.
							SCALE .0400

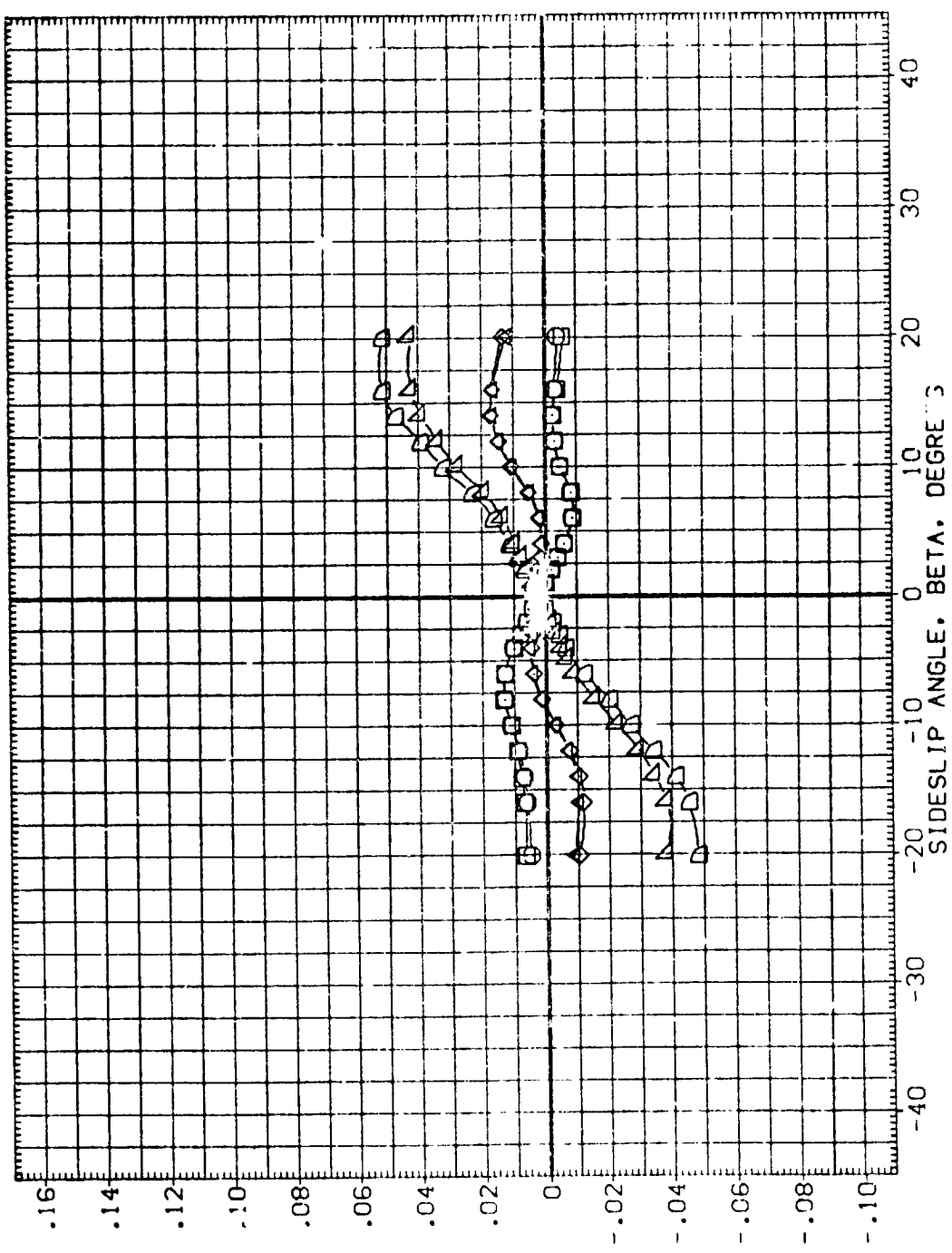


FIG.41 EFFECT OF BOOM LENGTH, CONF.5, ALPHA=6.38, ELEVATORS=0.0

(A)Q = 36.26



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0045)	CA11UWAL1146(EXT)K1H15.6V9.1C1	AT86AT87 T28.1	-1.970	.000	.000	SREF 5500.0000 SQ.FT.
(RG0113)	CA11UWAL1146(EXT)K1H15.6V9.1C1	AT86AT87 T28.1	-2.000	.000	.000	LREF 327.7800 IN.
(RG0041)	CA11UWAL1146(EXT)K1H15.6V9.1C1V11	AT86AT87 T28.1	-1.970	.000	.000	BREF 2348.0000 IN.
(RG0044)	CA11UWAL1146(EXT)K1H15.6V9.1C1V12	AT86AT87 T28.1	-1.970	.000	.000	YMRP 1339.9100 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

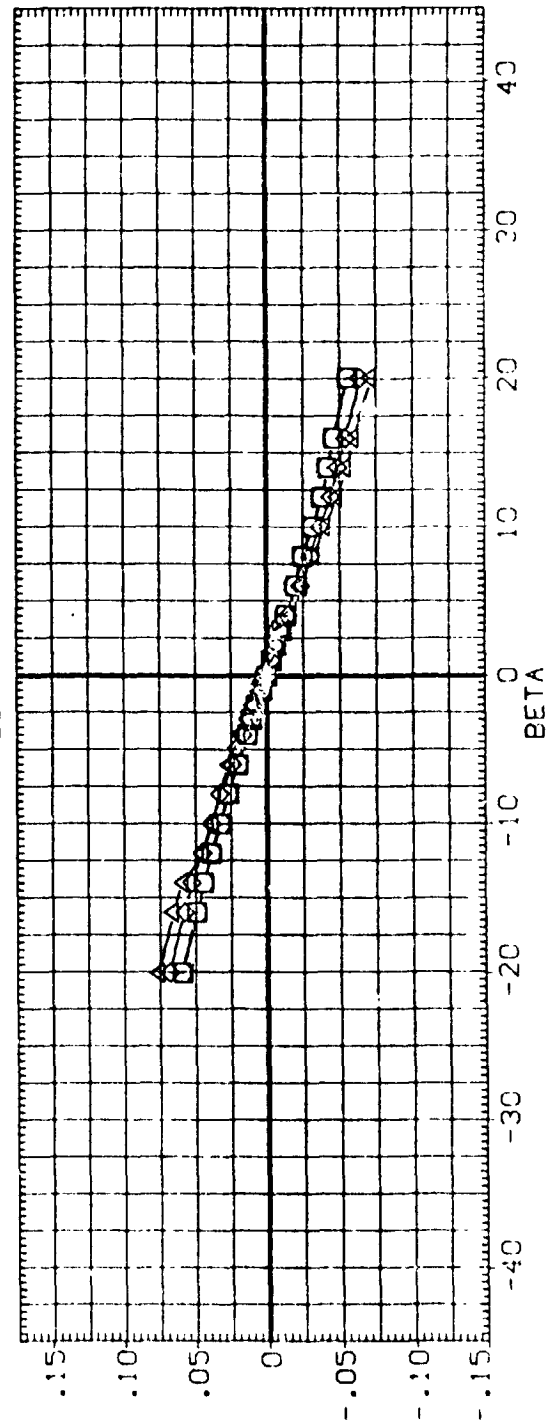
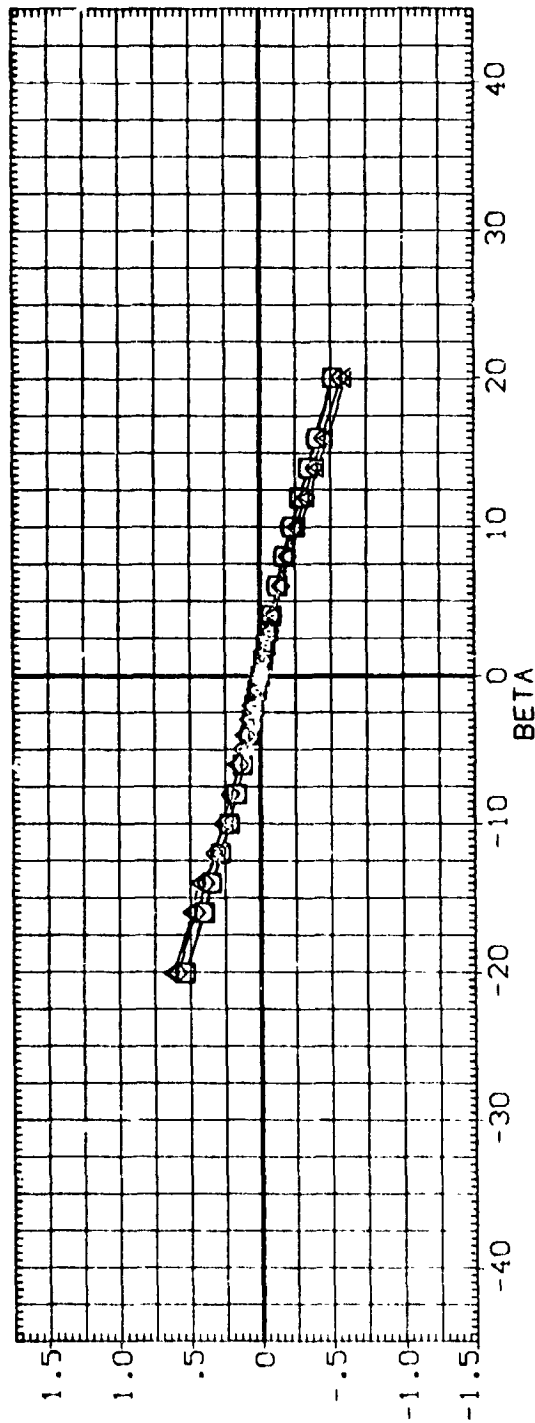


FIG.42 EFFECT OF BOOM FINS, CONF.5, ALPHA=6.38, ELEVATORS=0.0

(A) = 36.28

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0045)	CA11UWAL1146(EXT)K1H15.6V9.1C1	6.380	-1.970	.000	.000	SREF 5500.0000 SQ.I.
(RG0113)	CA11UWAL1146(EXT)K1H15.6V9.1C1	6.380	-2.000	.000	.000	LREF 327.7800 IN.
(RG0041)	CA11UWAL1146(EXT)K1H15.6V9.1C1V11	6.380	-1.970	.000	.000	BREF 2348.0000 IN.
(RG0044)	CA11UWAL1146(EXT)K1H15.6V9.1C1V12	6.380	-1.970	.000	.000	XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

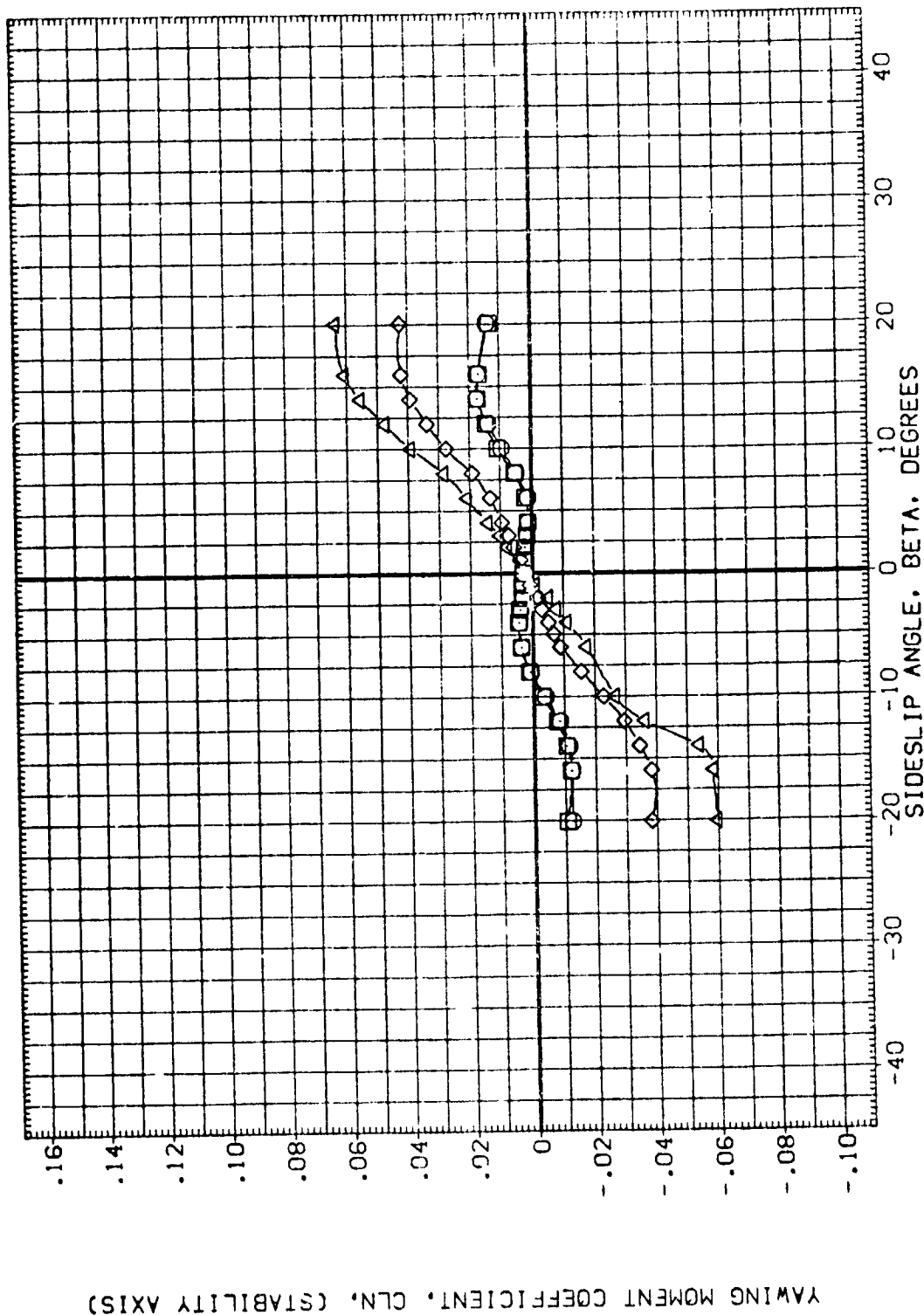


FIG.42 EFFECT OF BOOM FINS, CONF.5, ALPHA=6.38, ELEVATORS=0.0

(A) = 36.28

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(R60040)	CALLUWAL1146(EXT)KIH15.6V9.1C2V11 AT86AT87 T28.1	6.380	-1.970	.000	.000	SREF 5500.0000 SO.FT.
(R60124)	CALLUWAL1146(EXT)KIH15.6V9.1C2V11 AT86AT87 T28.1	6.380	-2.000	.000	.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

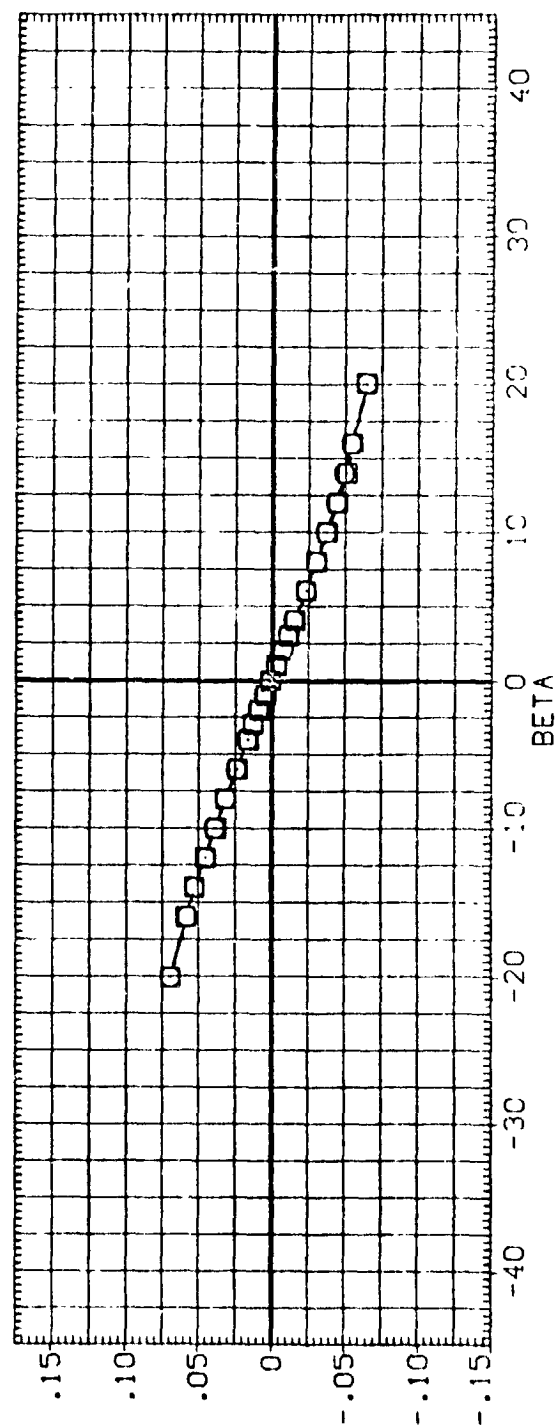
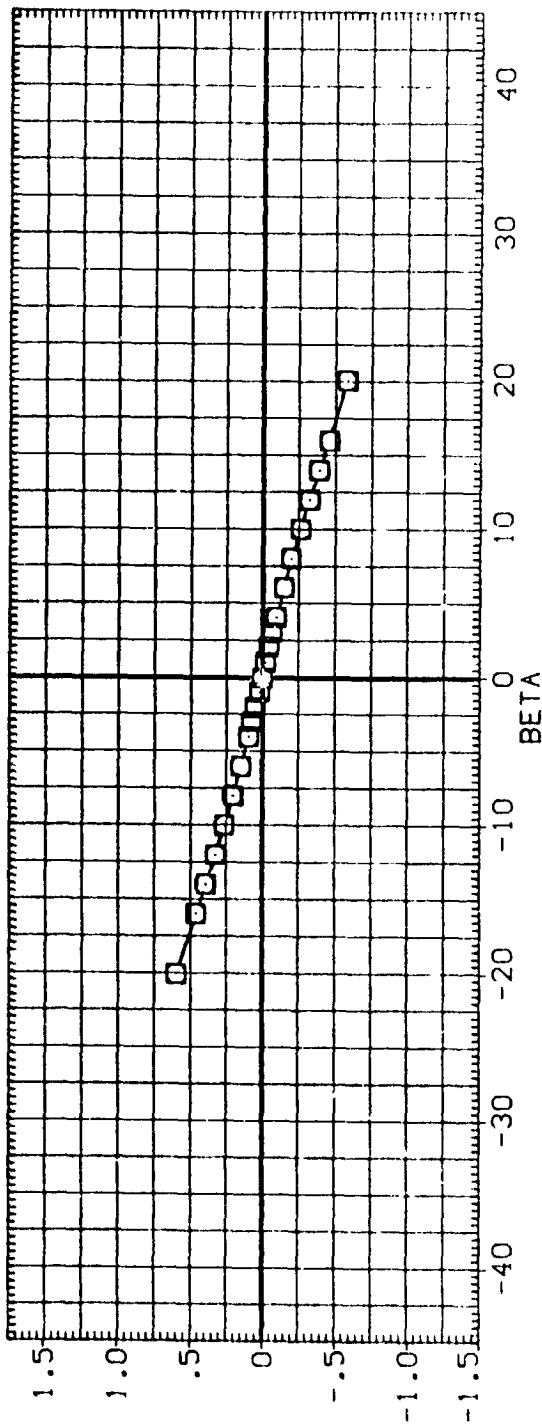


FIG.43 EFFECT OF TANK SUP. DIAG. BRACE. CONF.5(LONG BOOMS),ALPHA=6.38,ELEV.=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0040)	CALLUWAL1146(EXT)K1H15.6V9.1C2V11 AT86AT87 T28.1	6.380	-1.970	.000	.000	SREF 5500.0000 SO.FT.
(RG0124)	CALLUWAL1146(EXT)K1H15.6V9.1C2V11 AT86AT87 T28.1	6.380	-2.000	.000	.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

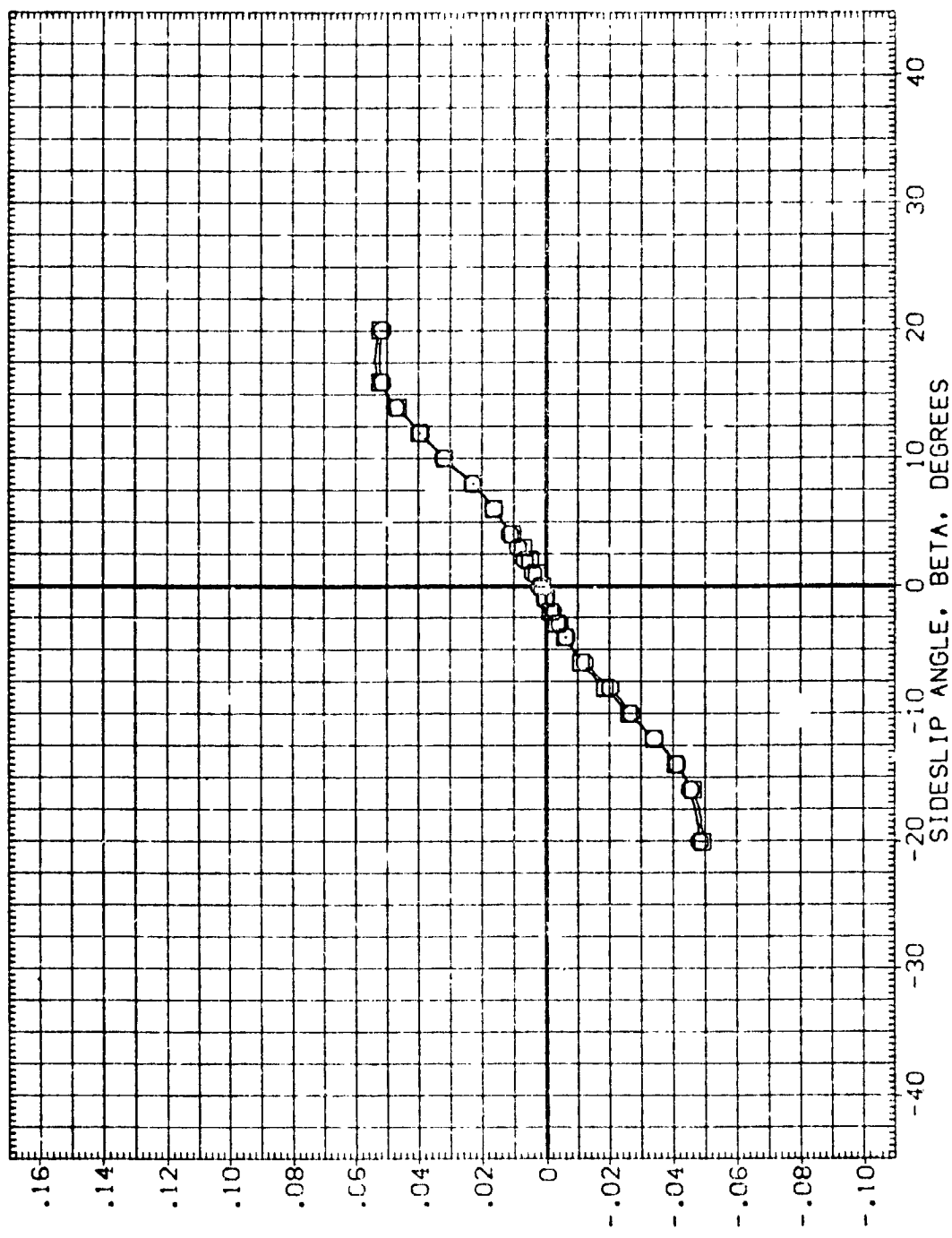


FIG.43 EFFECT OF TANK SUP. DIAG. BRACE, CONF.5(LONG BOOMS), ALPHA=6.38, ELEV.=0.0  
 (A) = 36.32 PAGE 80

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0100)	CALLUVAL1146(EXT)K1H15.6V9.1CIV11 AT86AT87 128.1	2.080	-1.960	.000	.000	SREF 5500.0000 SQ.FT.
(RG0104)	CALLUVAL1146(EXT)K1H15.6V9.1CIV11 AT86AT87 128.1	2.080	-1.960	25.000	25.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

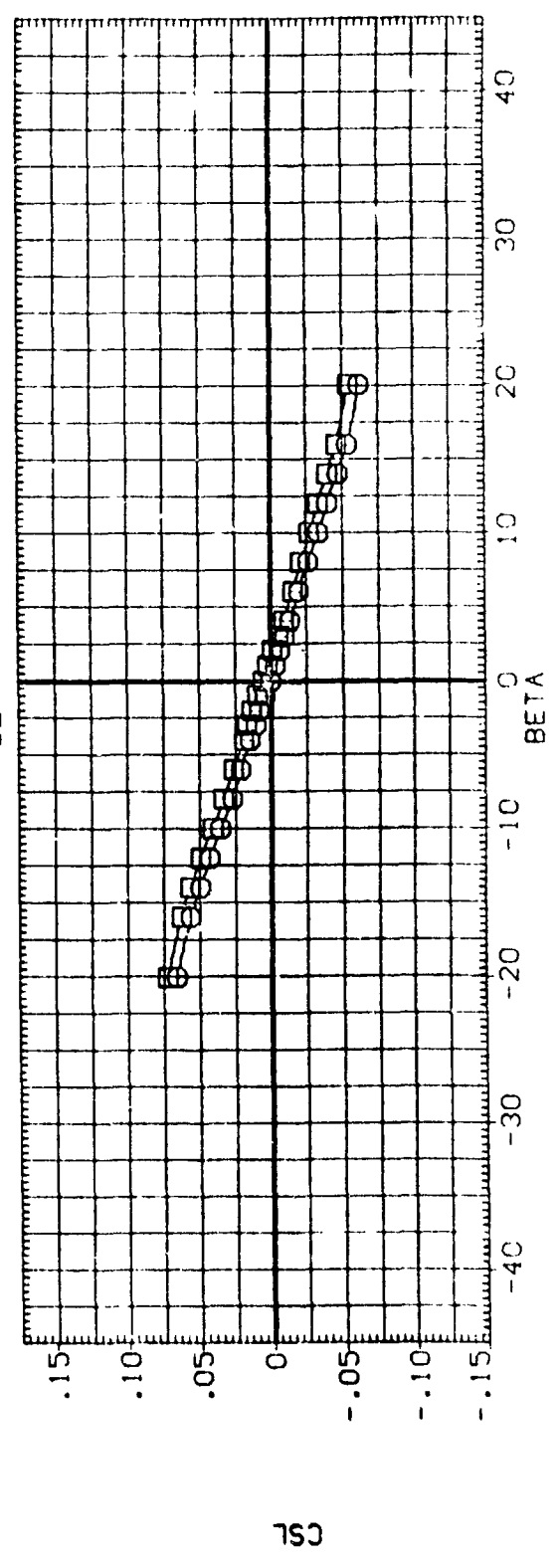
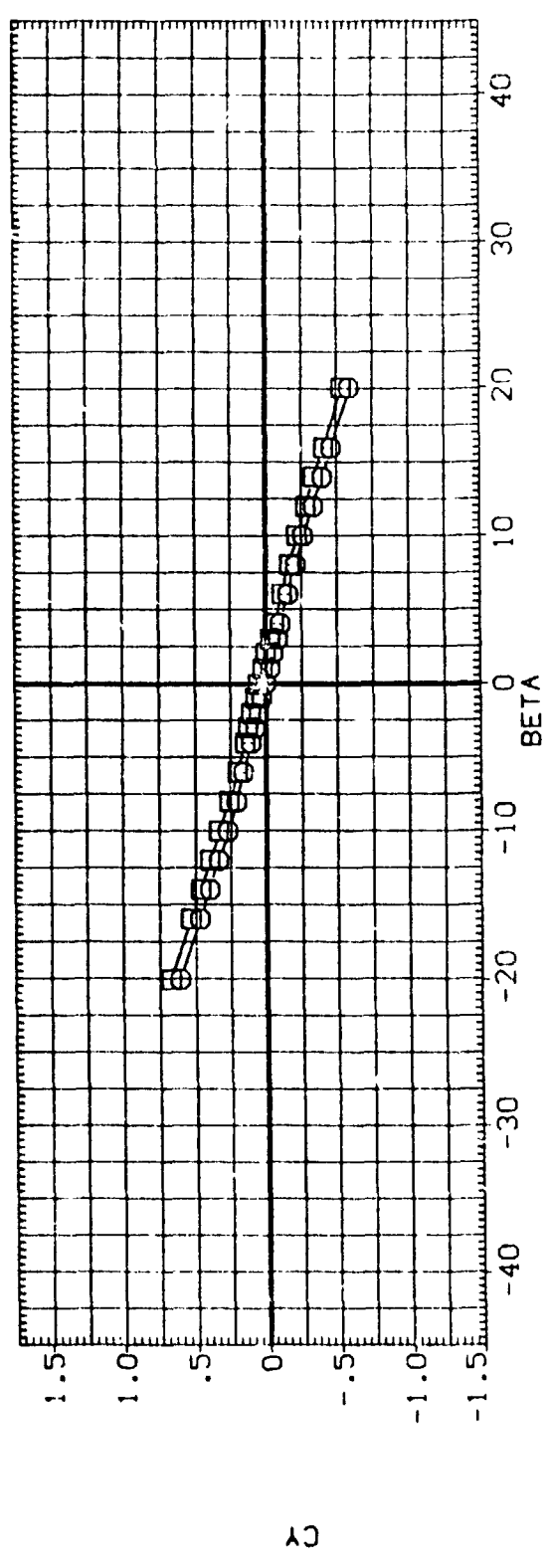


FIG.44 RUDDER EFFECTIVENESS, CONF.5. ALPHA=2.08, ELEVATORS=0.0

(A) = 36.30

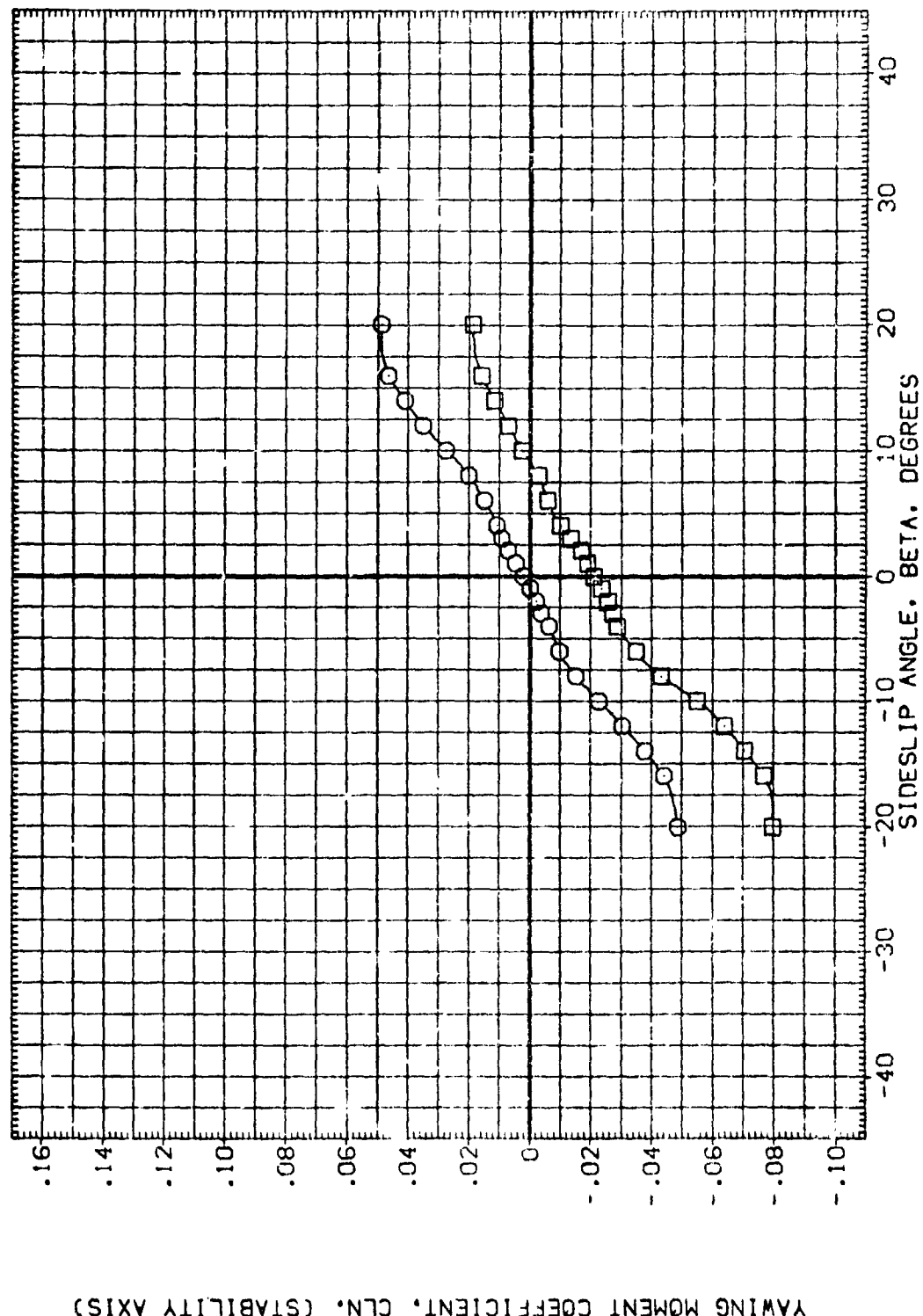
DATA SET SYMBOL (RG0100) (RG0104) B

CONFIGURATION DESCRIPTION  
 CALLUWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1  
 CALLUWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1

ALPHA STAB RUD-U RUD-L

2.080 -1.960 .000 .000  
 2.080 -1.960 25.000 25.000

REFERENCE INFORMATION  
 SREF 5500.0000 50. FT.  
 LREF 327.7800 IN.  
 BREF 2348.0000 IN.  
 XMRP 1335.8100 IN. XC  
 YMRP 190.7500 IN. YC  
 ZMRP 190.7500 IN. ZC  
 SCALE .0400



YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

FIG.4.4 RUDDER EFFECTIVENESS, CONF.5, ALPHA=2.08, ELEVATORS=0.0

(A)G = 36.30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0101)	CA11UVAL1146(EXT)K1H15.6V9.1CIV11 AT86AT87 T28.1	6.380	-1.960	.000	.000	SREF 5500.0000 SQ.FT.
(RG0041)	CA11UVAL1146(EXT)K1H15.6V9.1CIV11 AT86AT87 T28.1	6.380	-1.970	.000	.000	LREF 327.7800 IN.
(RG0106)	CA11UVAL1146(EXT)K1H15.6V9.1CIV11 AT86AT87 T28.1	6.380	-1.960	25.000	25.000	BREF 2349.0000 IN.
(RG0043)	CA11UVAL1146(EXT)K1H15.6V9.1CIV11 AT86AT87 T28.1	6.380	-1.970	25.000	25.000	XHRP 1339.9100 IN.
(RG0103)	CA11UVAL1146(EXT)K1H15.6V9.1CIV11 AT86AT87 T28.1	6.380	-1.960	25.000	25.000	YHRP 190.7500 IN.
(RG0107)	CA11UVAL1146(EXT)K1H15.6V9.1CIV11 AT86AT87 T28.1	6.380	-1.960	25.000	25.000	ZHRP 190.7500 IN.
						SCALE .0400

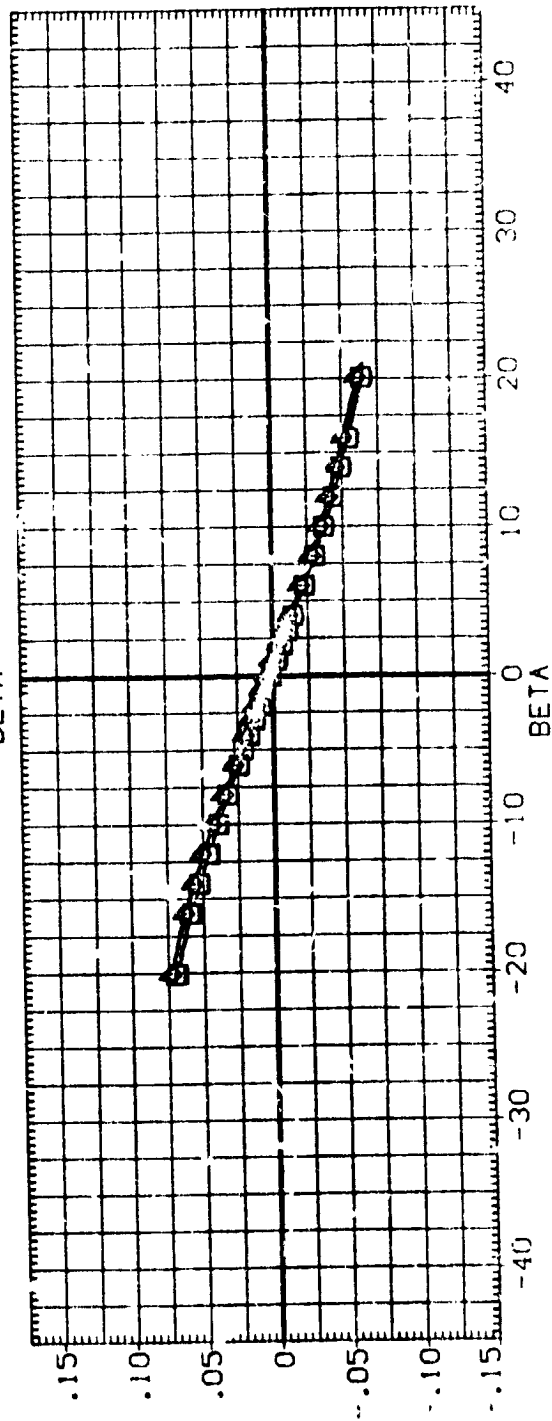
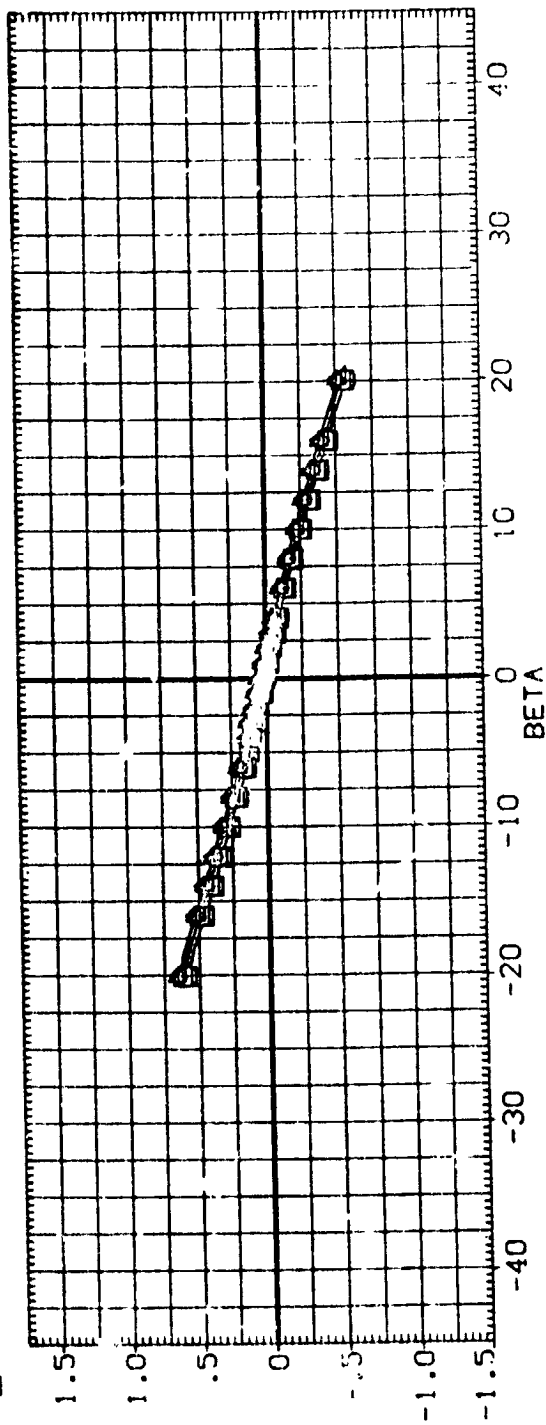


FIG.45 RUDDER EFFECTIVENESS, CONF.5, ALPHA=6.38, ELEVATORS=0.0

(A) = 35.32

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0101)	□	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86A187 128.1	6.380	-1.930	.000	.000	SREF 5500.0000 SQ.FT.
(RG0041)	○	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86A187 128.1	6.380	-1.970	.000	.000	LREF 327.7800 IN.
(RG0106)	△	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86A187 128.1	6.380	-1.970	25.000	25.000	BREF 2348.0000 IN.
(RG0043)	◇	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86A187 128.1	6.380	-1.960	25.000	25.000	YMRP 1339.9100 IN. XC
(RG0103)		CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86A187 128.1	6.380	-1.960	25.000	25.000	ZMRP 11.7500 IN. ZC
(RG0107)		CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86A187 128.1	6.380	-1.960	25.000	25.000	SCALE .0400

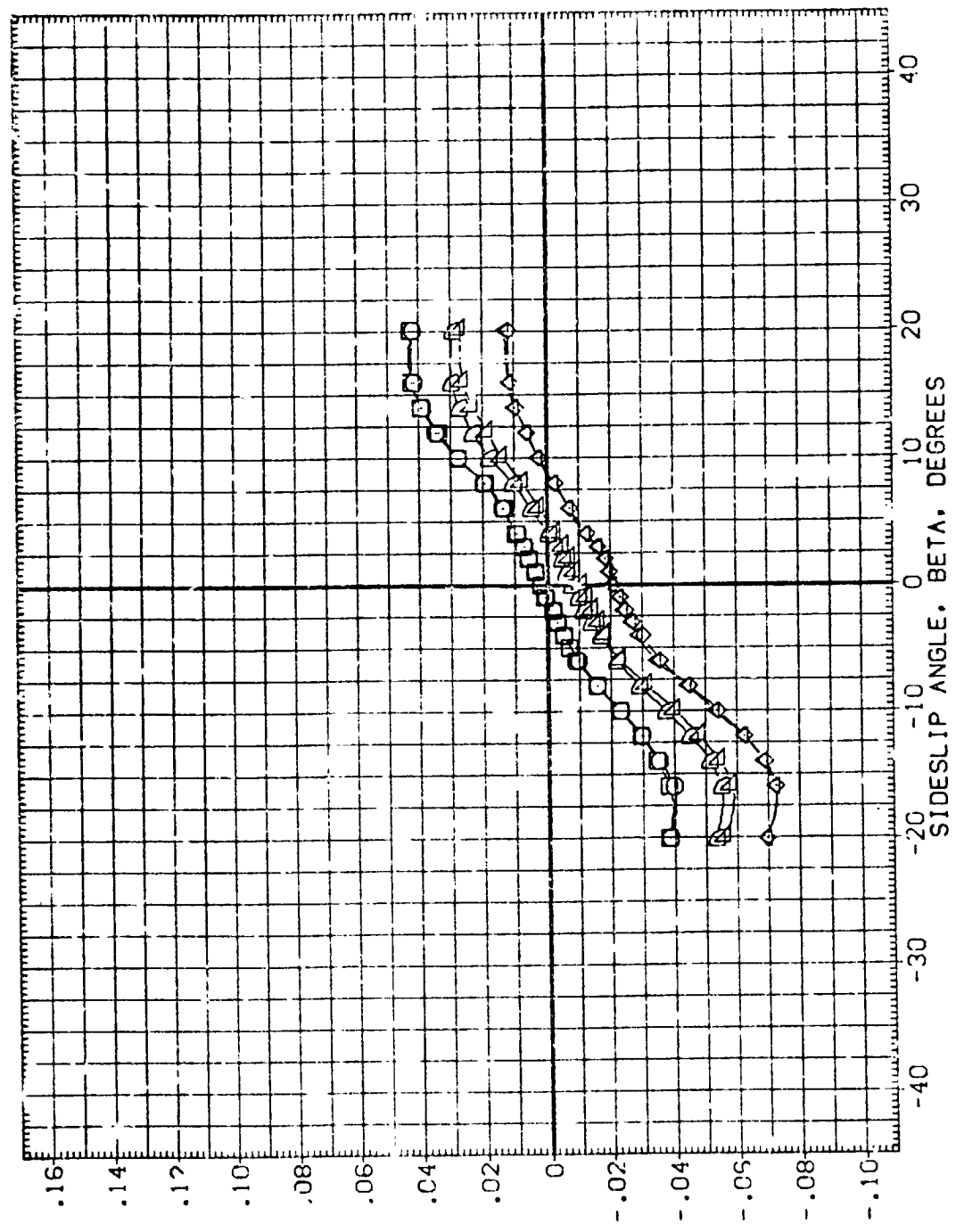


FIG.45 RUDDER EFFECTIVENESS, CONF.5, ALPHA=6.38, ELEVATORS=0.0

(A)Q = 36.32

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0102)	CALLUWA1146(EX)K1H15.6V9.1C1V11 AT86AT87 T28.1	12.790	-1.960	.000	.000	SREF 5500.0000 SQ.FT.
(RG0105)	CALLUWA1146(EX)K1H15.6V9.1C1V11 AT86AT87 T28.1	12.790	-1.960	25.000	25.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

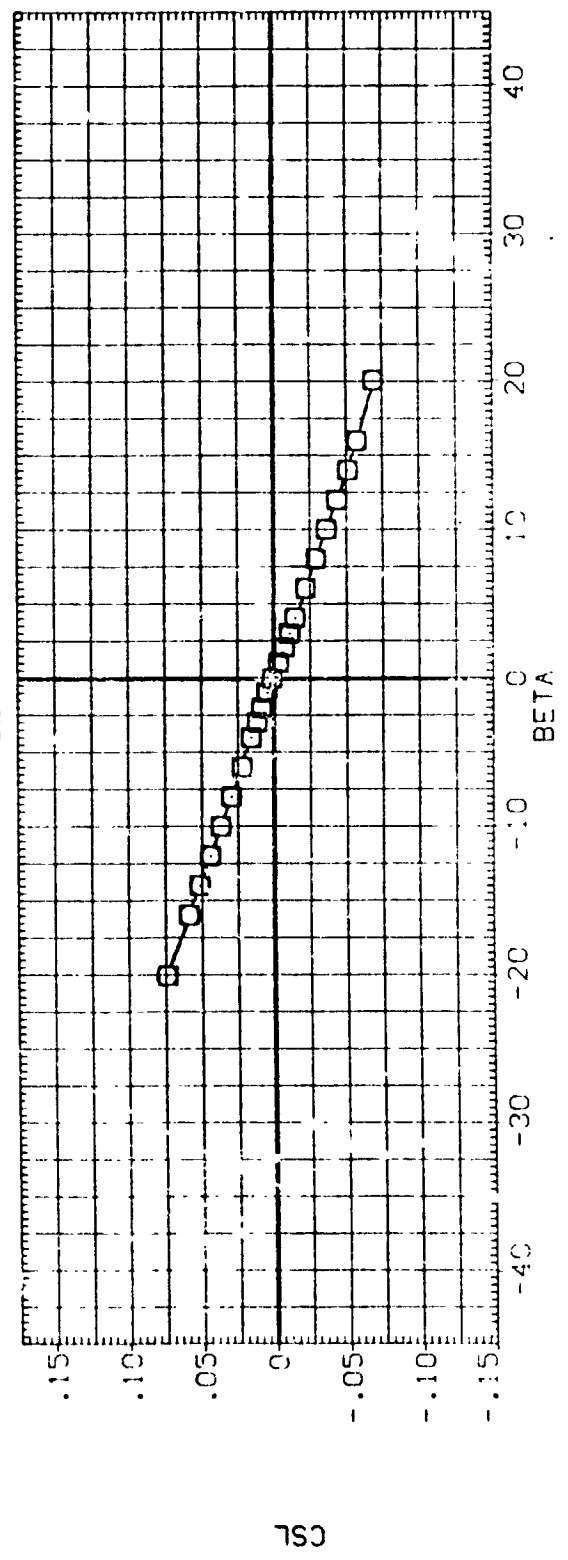
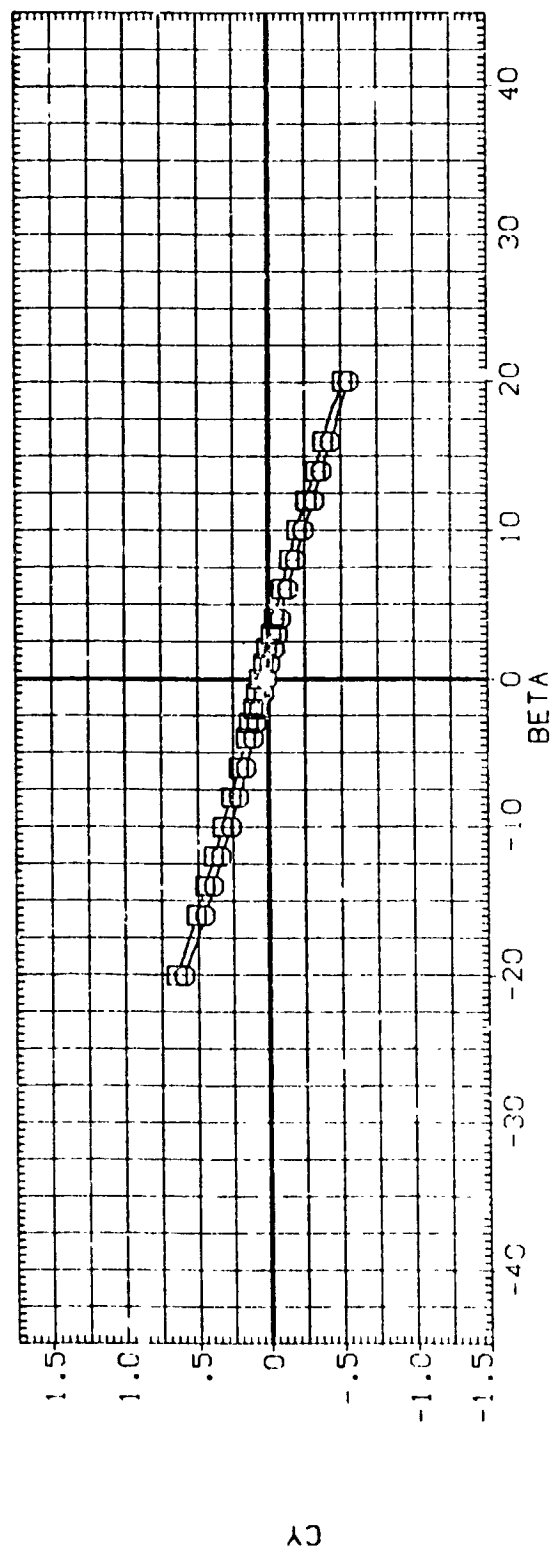


FIG.46 RUDDER EFFECTIVENESS, CONF.5, ALPHA=12.79, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0102)	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	12.790	-1.960	.000	.000	SREF 5500.0000 SO.FT.
(RG0105)	CA11UWAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1	12.790	-1.960	25.000	25.000	LREF 327.7800 IN.
						BREF 2348.0000 IN.
						XMRP 1339.9100 IN. XC
						YMRP .0000 IN. YC
						ZMRP 190.7500 IN. ZC
						SCALE .0400

YAWING MOMENT COEFFICIENT, CLN. (STABILITY AXIS)

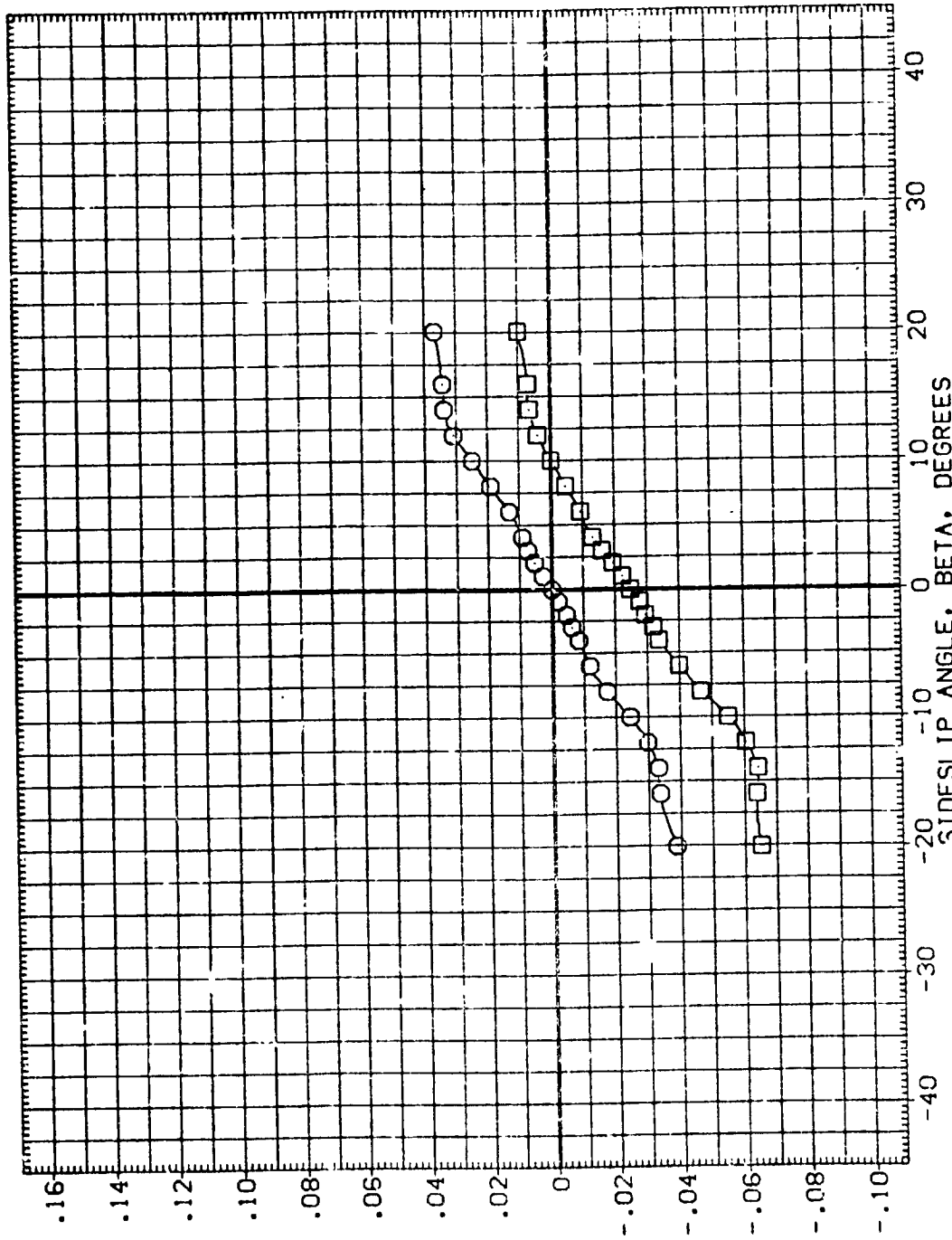


FIG.46 RUDDER EFFECTIVENESS, CONF.5, ALPHA=12.79, ELEVATORS=0.0

(A)0 = 33.41

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION	SO.FT.
(RG0050)	XX	CA11UWAL1146(EXT)K1H15.1 C1	AT90AT91 T28.1	-1.920	.000	.000	SREF	5500.0000
(RG0051)	XX	CA11UWAL1146(EXT)K1H15.1V9.1C1	AT90AT91 T28.1	-1.920	.000	.000	LREF	327.7800
(RG0052)	XX	CA11UWAL1146(EXT)K1H15.6V9.1C1	AT90AT91 T28.1	-1.920	.000	.000	BREF	2348.0000
(RG0054)	XX	CA11UWAL1146(EXT)K1H15.6V9.1C1V11	AT90AT91 T28.1	-1.920	.000	.000	XMRP	1339.9100
(RG0053)	XX	CA11UWAL1146(EXT)K1H15.6V9.1C1V12	AT90AT91 T28.1	-1.920	.000	.000	YMRP	.0000
							ZMRP	190.7500
							SCALE	.0400

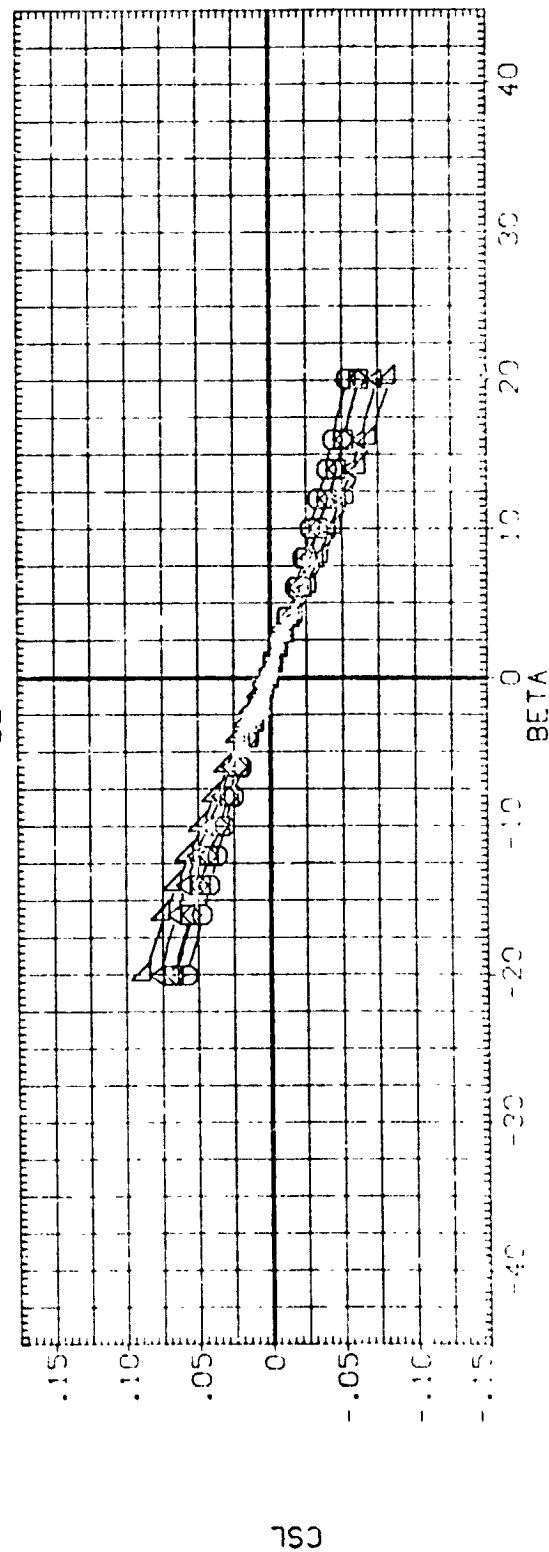
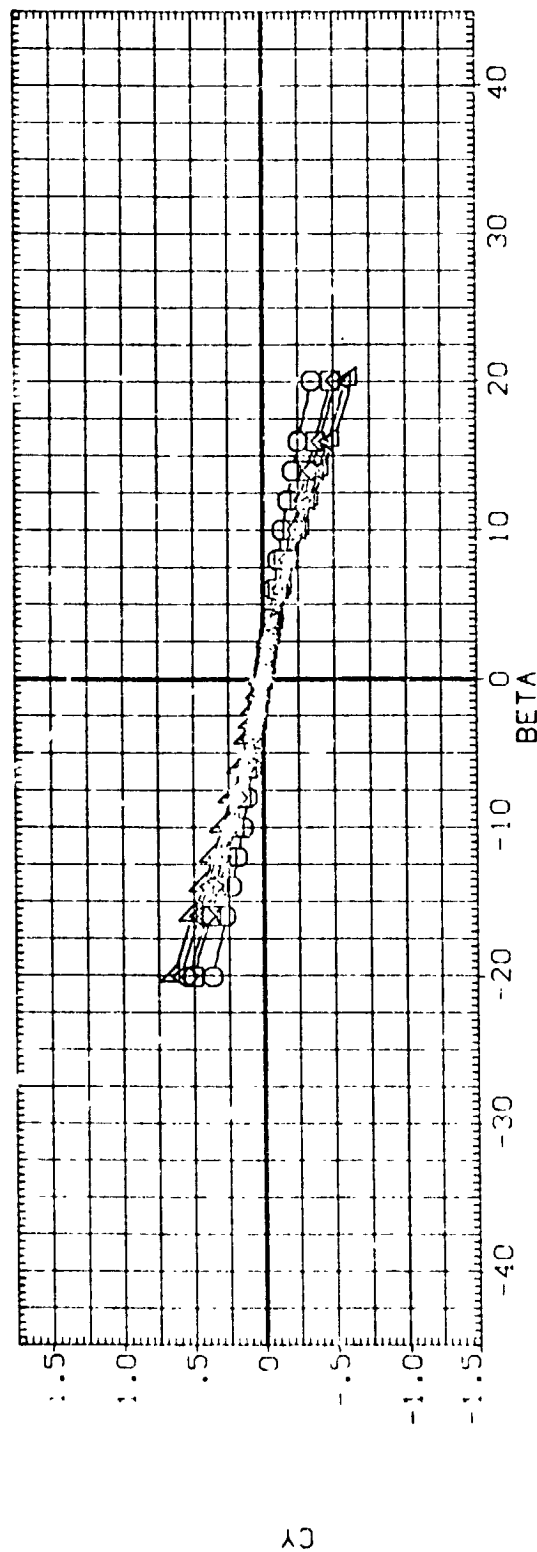


FIG.47 EFFECT OF VERTICAL FINS. CONF.5A, ALPHA=6.38, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(R00050)	CA11UVAL1146(EXT)K1H15.1	6.380	-1.920	.000	.000	SREF 5500.0000
(R00051)	CA11UVAL1146(EXT)K1H15.1V9.1C1	6.380	-1.920	.000	.000	LREF 327.7800
(R00052)	CA11UVAL1146(EXT)K1H15.6V9.1C1	6.380	-1.920	.000	.000	BREF 2348.0000
(R00053)	CA11UVAL1146(EXT)K1H15.6V9.1C1V11	6.380	-1.920	.000	.000	Y1 1339.8100
(R00054)	CA11UVAL1146(EXT)K1H15.6V9.1C1V12	6.380	-1.920	.000	.000	Y1 1339.8100
(R00055)	CA11UVAL1146(EXT)K1H15.6V9.1C1V12	6.380	-1.920	.000	.000	ZMRP 190.7500
						SCALE .0400

YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

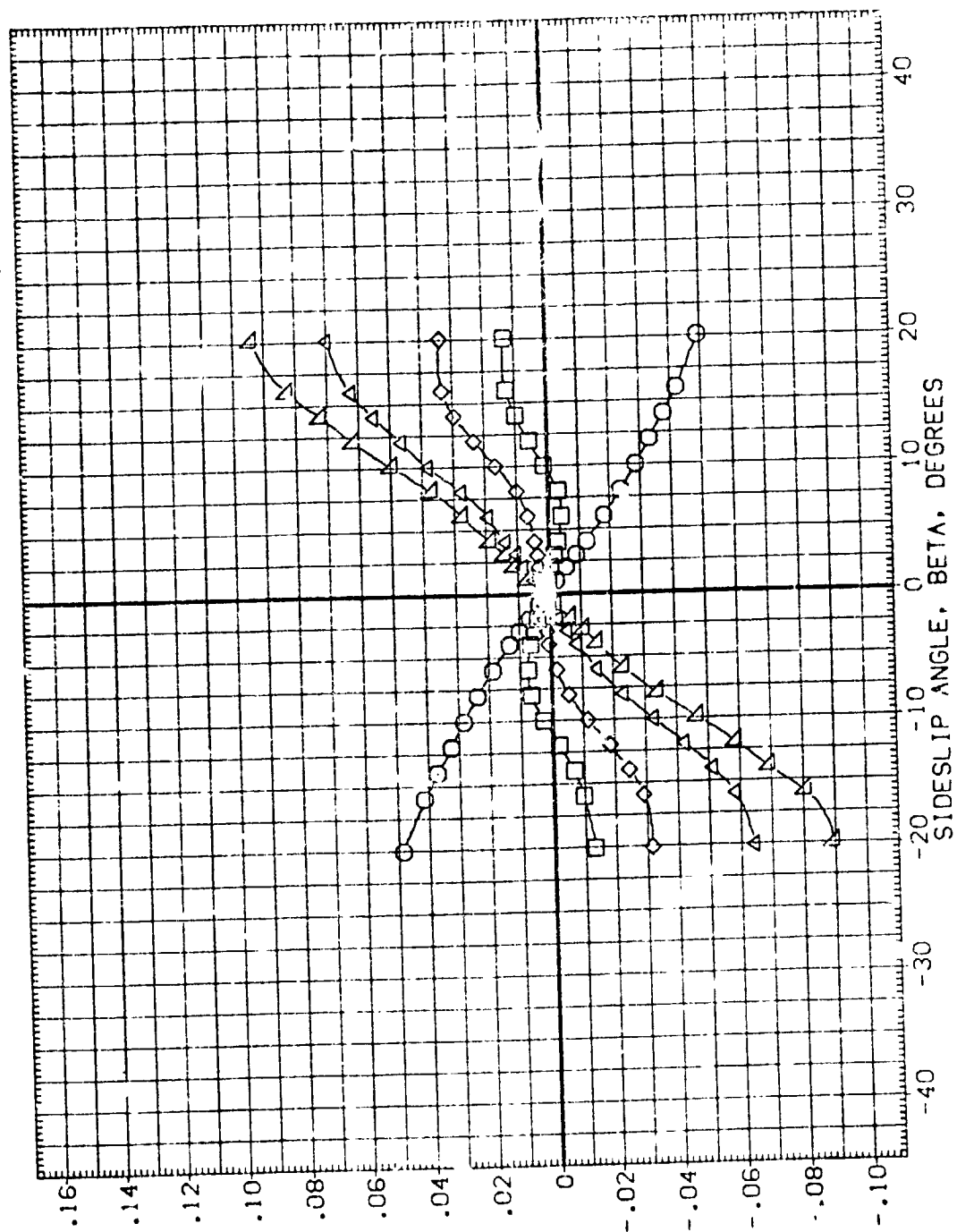


FIG.47 EFFECT OF VERTICAL FINS, CONF.5A, ALPHA=6.38, ELEVATORS=0.0

36.20



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(R60054)	CA110WAL1146(EXT)K1H15.6V9.1C1V11 AT90AT91 T28.1	6.380	-1.920	.000	.000	SREF 5500.0000 50.FT.
(R60056)	CA110WAL1146(EXT)K1H15.6V9.1C1V11 AT90AT91 T28.1	6.380	-1.920	25.000	25.000	LREF 327.7800 IN.
(R60059)	CA110WAL1146(EXT)K1H15.6V9.1C1V11 AT90AT91 T28.1	6.380	-1.920	25.000	25.000	BREF 2748.0000 IN.
(R60060)	CA110WAL1146(EXT)K1H15.6V9.1C1V11 AT90AT91 T28.1	6.380	-1.920	.000	.000	XMRP 1339.9100 IN.
(R60058)	CA110WAL1146(EXT)K1H15.6V9.1C1V11 AT90AT91 T28.1	6.380	-1.920	25.000	25.000	YMRP .0000 IN.
(R60059)	CA110WAL1146(EXT)K1H15.6V9.1C1V11 AT90AT91 T28.1	6.380	-1.920	25.000	25.000	ZMRP 190.7500 IN.
						SCALE .0400

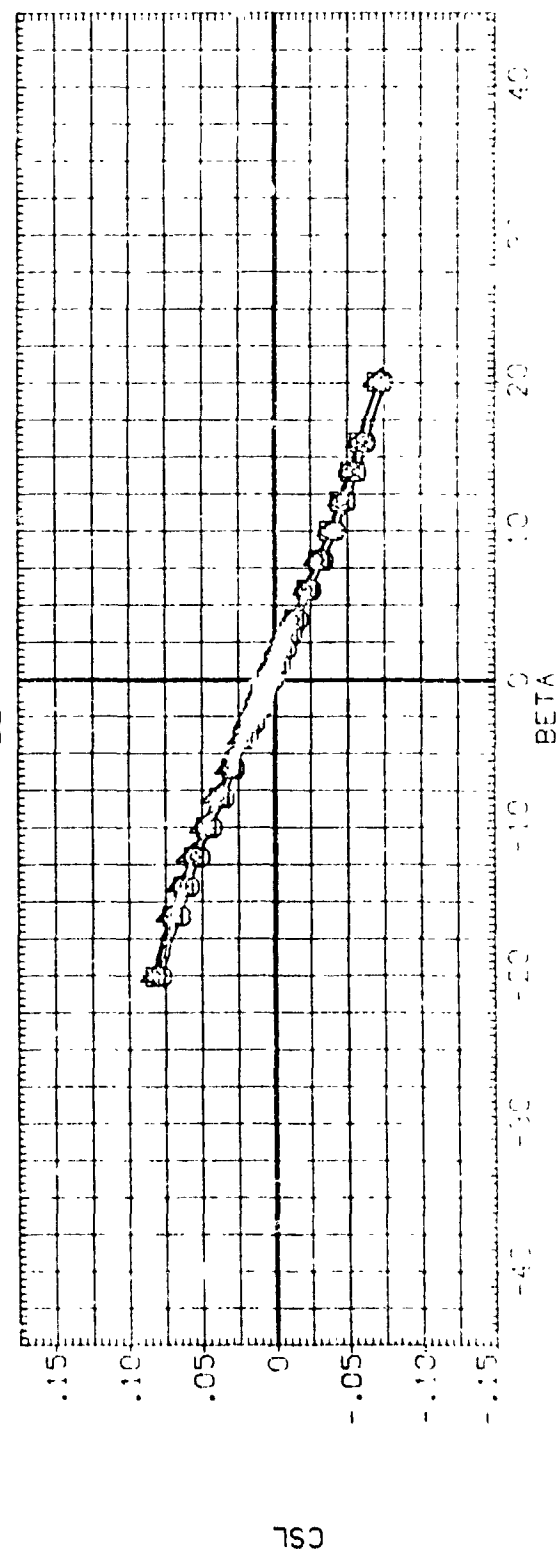
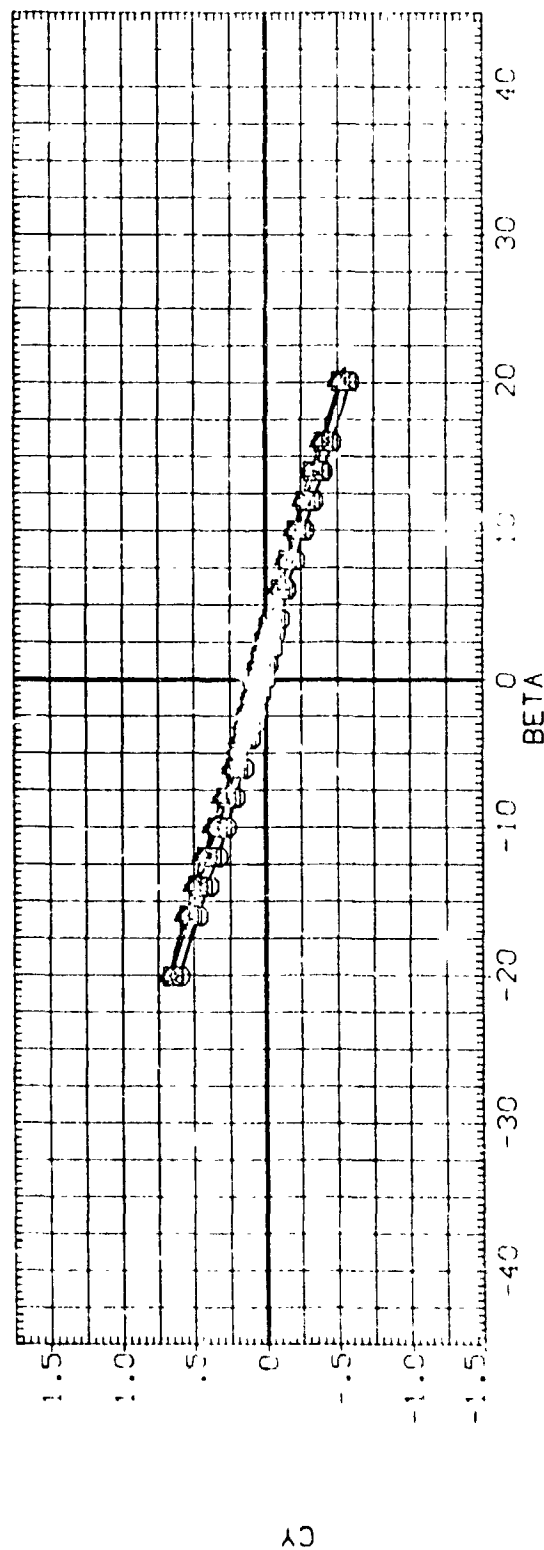


FIG. 48 RUDDER EFFECTIVENESS, CONF. 5A, ALPHA=6.38, ELEVATION=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAV	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(R00054)	CALLUWAL1146(XT)KIH15.6V9.4CIV11 AT90AT91 T28.1	6.380	-1.920	.000	.000	SREF 5500.0000 SQ.FT.
(R00056)	CALLUWAL1146(XT)KIH15.6V9.4CIV11 AT90AT91 T28.1	6.380	-1.920	.000	.000	LREF 327.7800 IN.
(R00059)	CALLUWAL1146(XT)KIH15.6V9.4CIV11 AT90AT91 T28.1	6.380	-1.920	.000	.000	BREF 2348.0000 IN.
(R00063)	CALLUWAL1146(XT)KIH15.6V9.4CIV11 AT90AT91 T28.1	6.380	-1.920	.000	.000	XMRP 1339.9130 IN.
(R00058)	CALLUWAL1146(XT)KIH15.6V9.4CIV11 AT90AT91 T28.1	6.380	-1.920	.000	.000	YMRP 190.7500 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

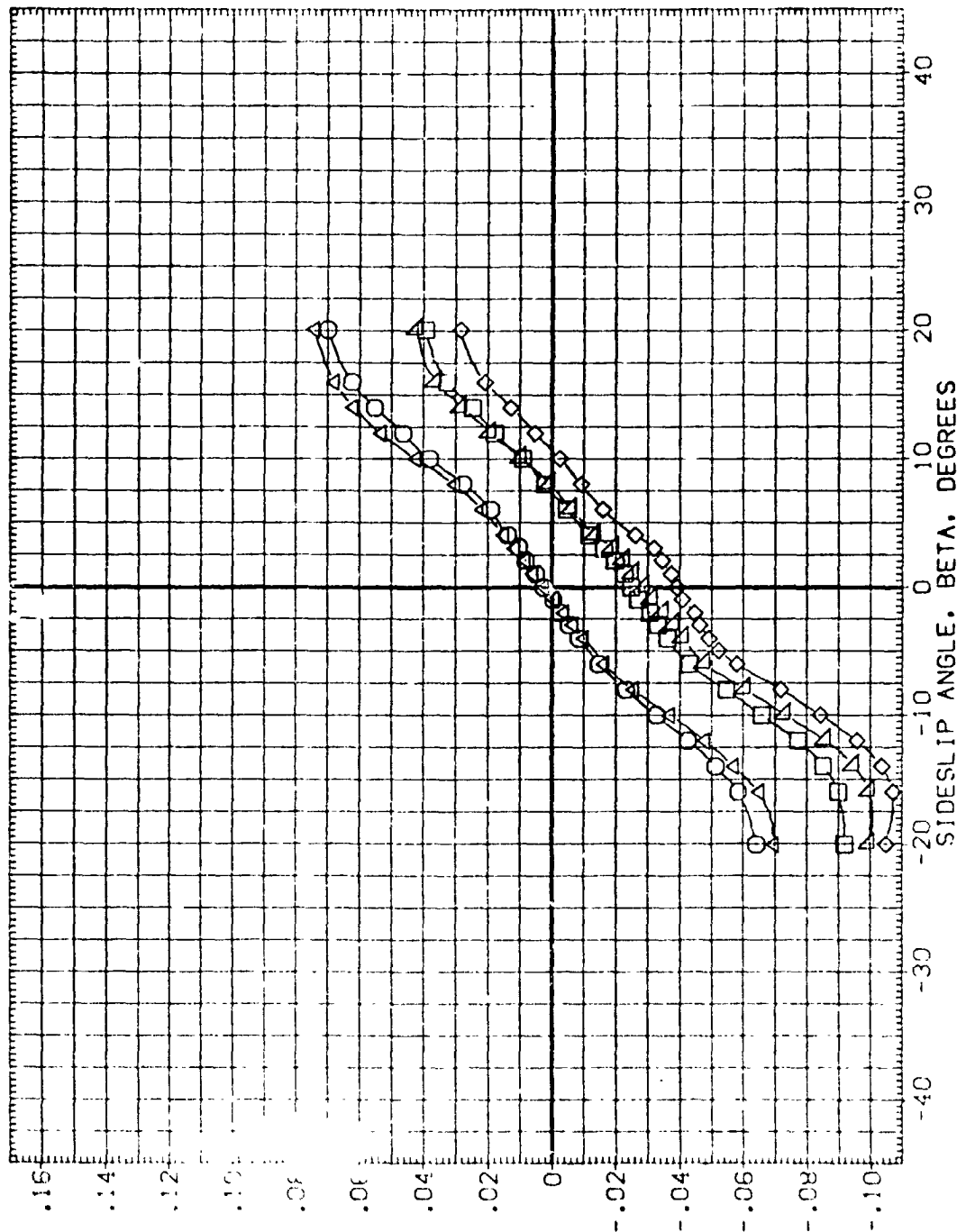


FIG.48 RUDDER EFFECTIVENESS, CONF.5A, ALPHAV=6.38, ELEVATORS=0.0

(A) = 36.33

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(R60032)	CALLOWAL1146(EXT)K1H15.6V9.1C1	6.380	-1.920	.000	.000	SREF 5500.0000 SQ.FT.
(R60037)	CALLOWAL1146(EXT)K1H15.6V9.1C1	6.380	-1.920	25.000	25.000	LREF 327.7800 IN.
(R60056)	CALLOWAL1146(EXT)K1H15.6V9.1C1	6.380	-1.920	25.000	25.000	BREF 2348.0000 IN.
(R60054)	CALLOWAL1146(EXT)K1H15.6V9.1C1	6.380	-1.920	.000	.000	XMRP 1339.9100 IN.
						YMRP .0000 IN.
						ZMRP 190.7500 IN.
						SCALE .0400

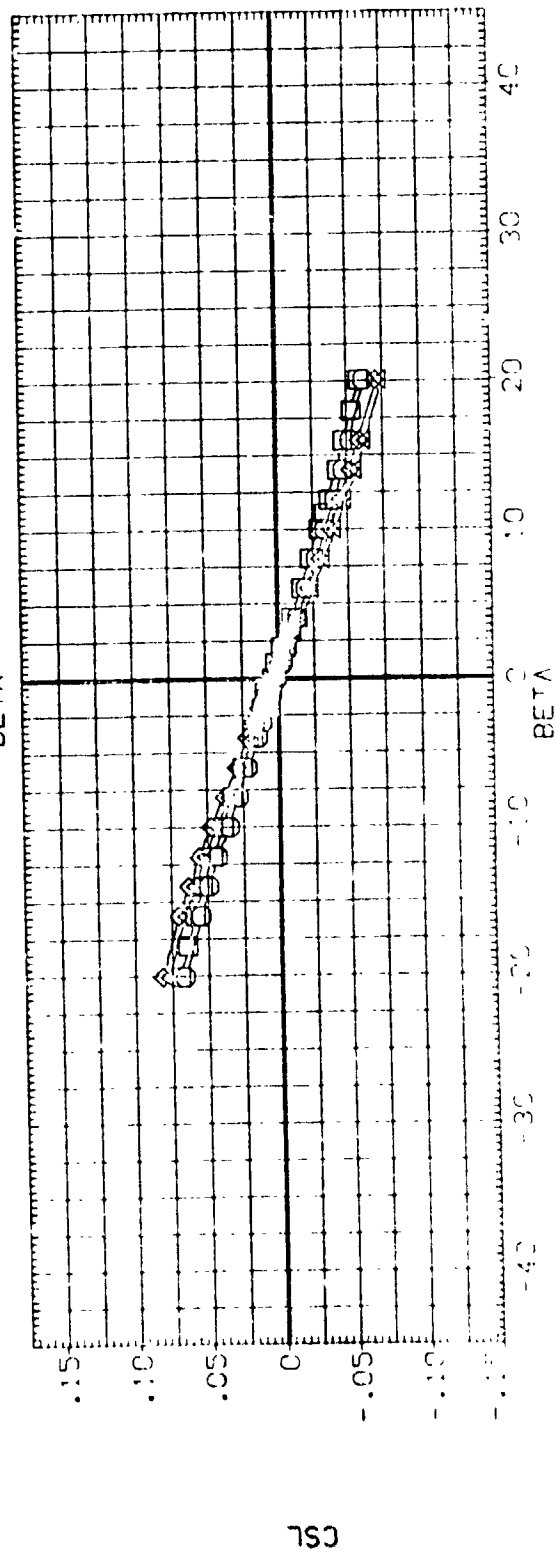
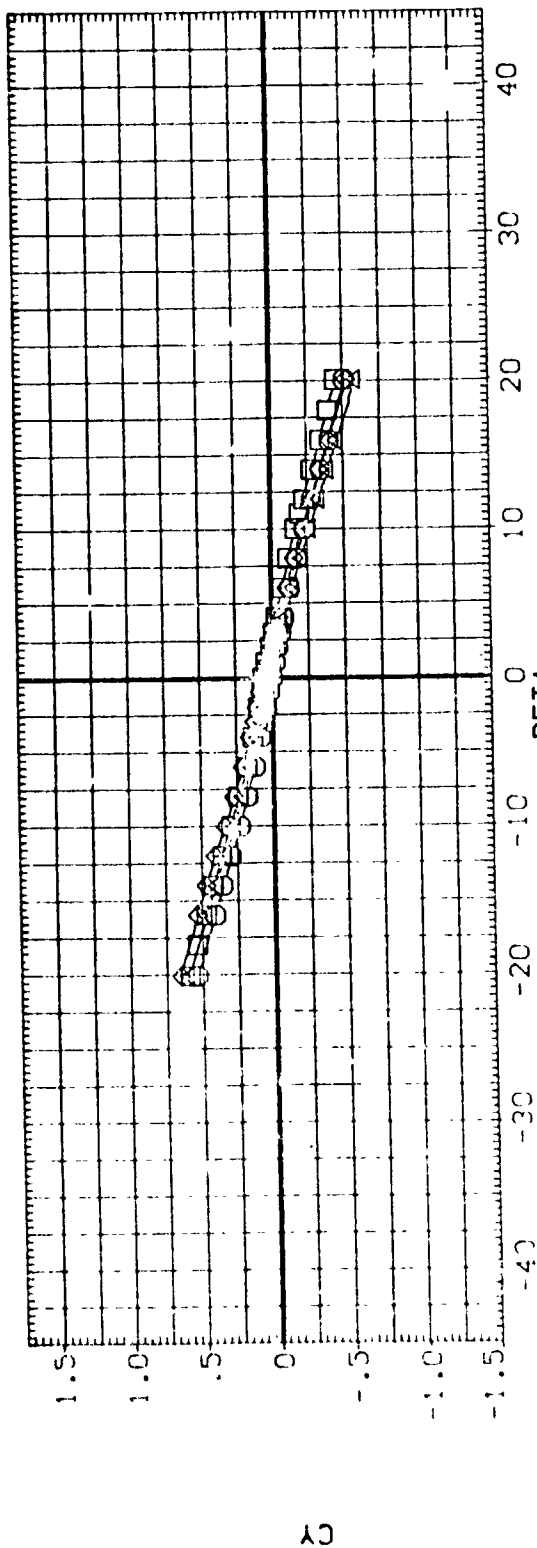
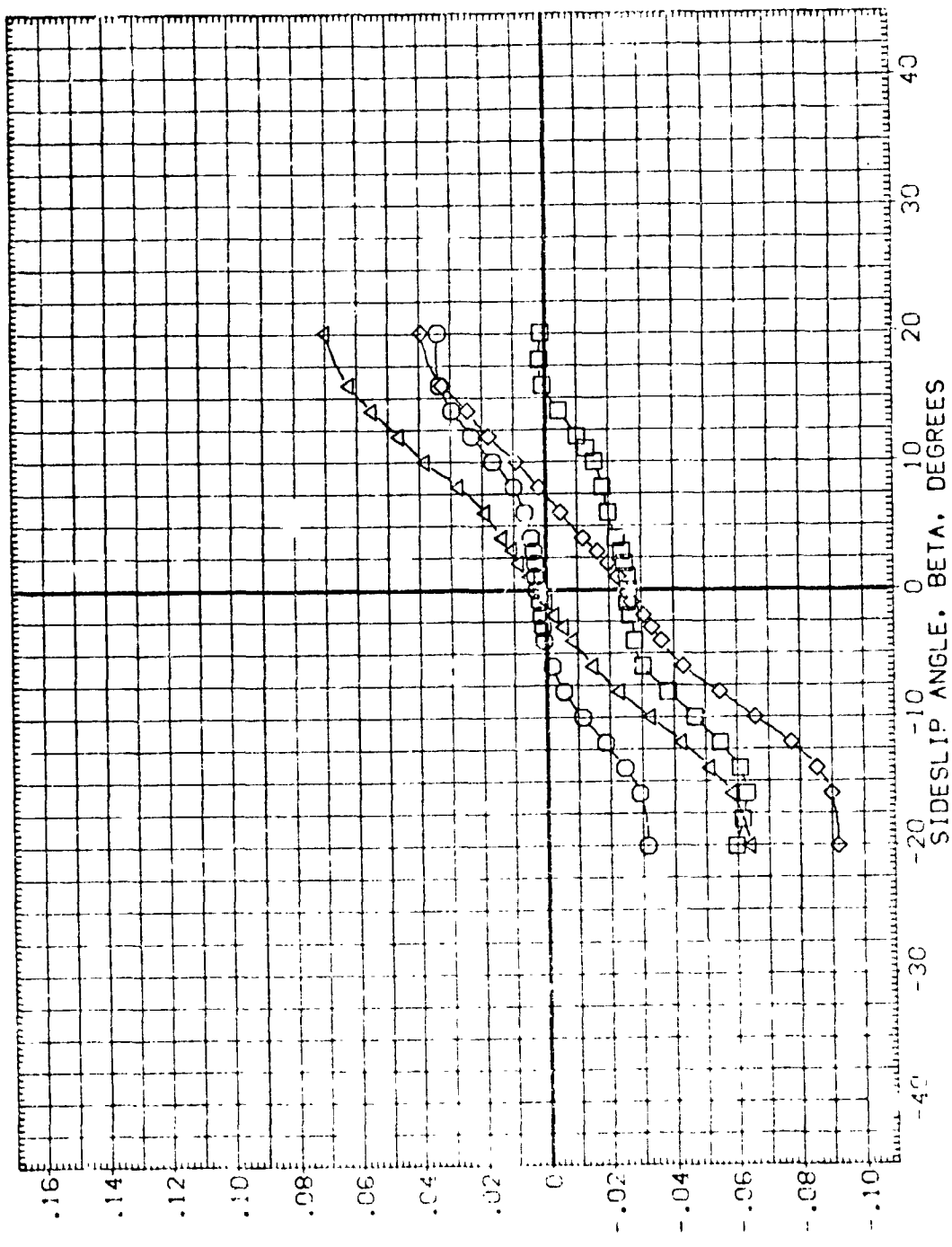


FIG.49 EFFECT OF 800 FMS ON 747 PLODER CONTROL, CONF.5A, ALPHA=6.38, ELEV.=0.0

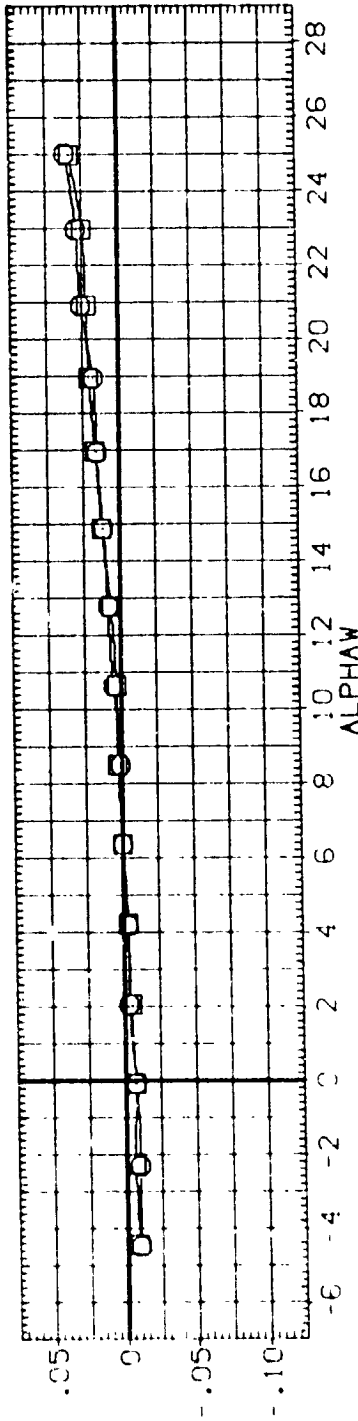
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(RG0052)	CAT11UWAL1146(EXT)K1H15.6V9.1C1	6.380	-1.920	.000	.000	SREF 5500.0000 SC.Ft.
(RG0057)	CAT11UWAL1146(EXT)K1H15.6V9.1C1	6.380	-1.920	25.000	25.000	LREF 327.7000 IN.
(RG0056)	CAT11UWAL1146(EXT)K1H15.6V9.1C1V11	6.380	-1.920	25.000	25.000	BREF 2348.0000 IN.
(RG0054)	CAT11UWAL1146(EXT)K1H15.6V9.1C1V11	6.380	-1.920	.000	.000	XMRP 1339.9100 IN. XC
						YMRP 190.7500 IN. YC
						SCALE .0100



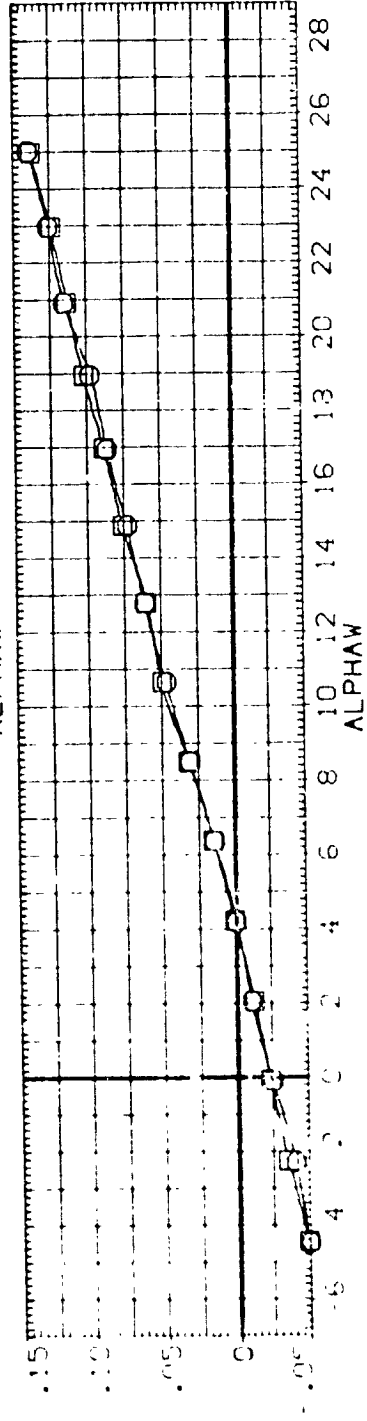
YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

FIG.49 EFFECT OF BOOM FINS ON 747 RUDDER CONTROL, CONF.5A, ALPHA=6.38,ELEV.=0.0

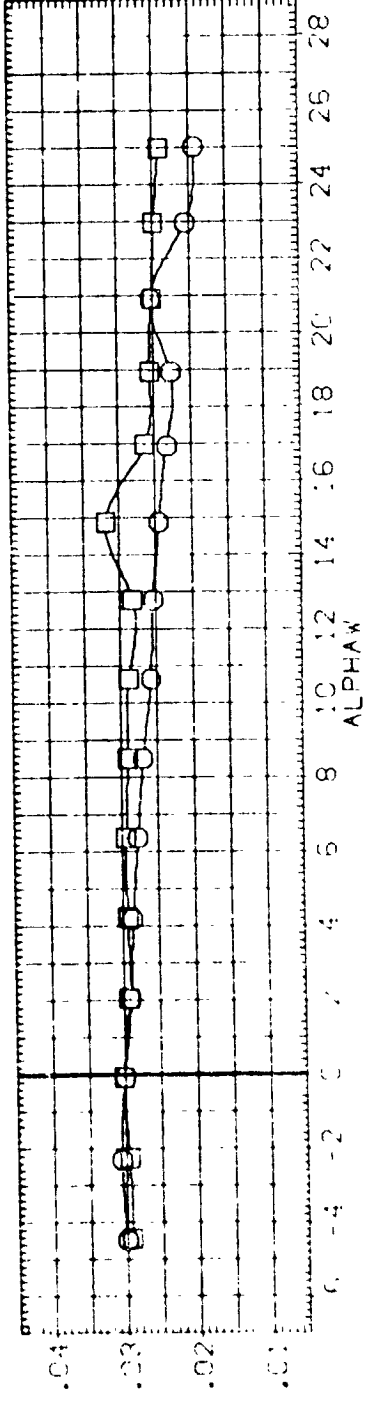
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	STAB	ELV-1B	ELV-0B	REFERENCE INFORMATION
(AG0072)	CALLUWAL1146(NT)K1 V8.1	.000	-1.930	.000		SREF 5500.0000 SQ.FT.
(AG0080)	CALLUWAL1146(NT)K1 V8.1	.000				LREF 327.7800 IN.
	CALLUWAL1146(NT)K1 V8.1					BREF 2348.0000 IN.
						YMRP 1348.0000 IN. Y1
						ZMRP 402.0000 IN. Z1
						SCALE .0400



CNT



CMT



CAT

FIG. 50 EFFECT OF TANK PITCH AND HORIZ. TAIL ON TANK LOADS IN PITCH, CONF. 1.1, RUD=0.0

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (A53/59) O CALL #AL1146(INT)KIH15.6V9.1CIV11 ATBSAT87 T28.1

BETA	STAB	ELV-18	ELV-08	REFERENCE INFORMATION
.000	-1.960	.000	.000	SREF 5500.0000 SQ. FT.
				LREF 327.7600 IN.
				BREF 2348.0000 IN. XT
				XMRP 1348.0000 IN. YT
				YMRP .0000 IN. ZT
				ZMRP 402.0000 IN. ZT
				SCALE .0400

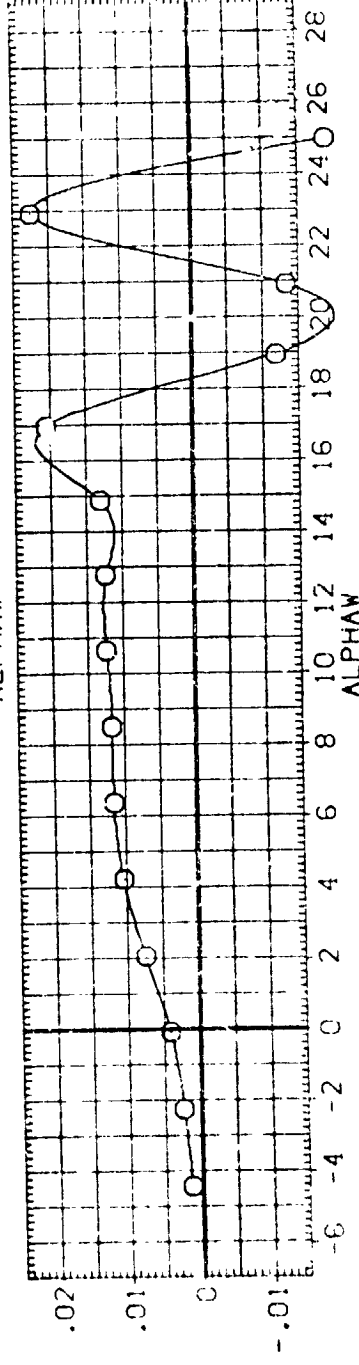
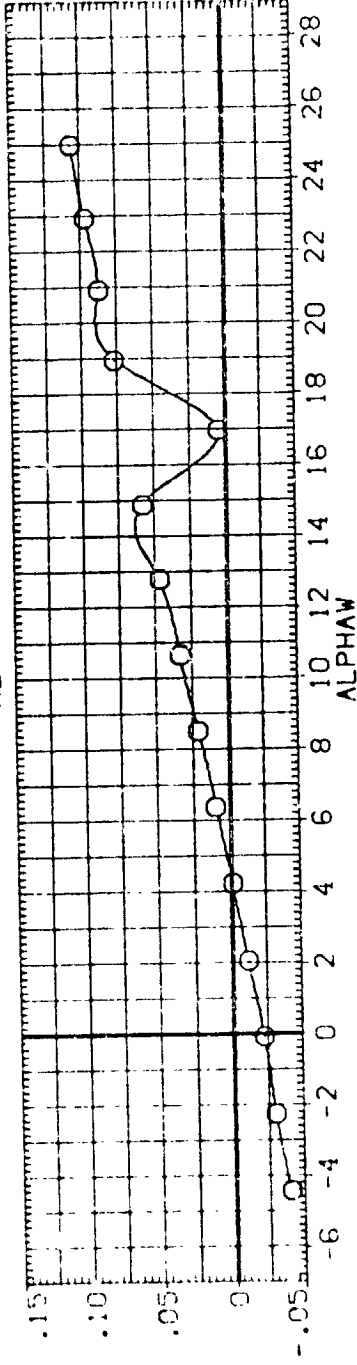
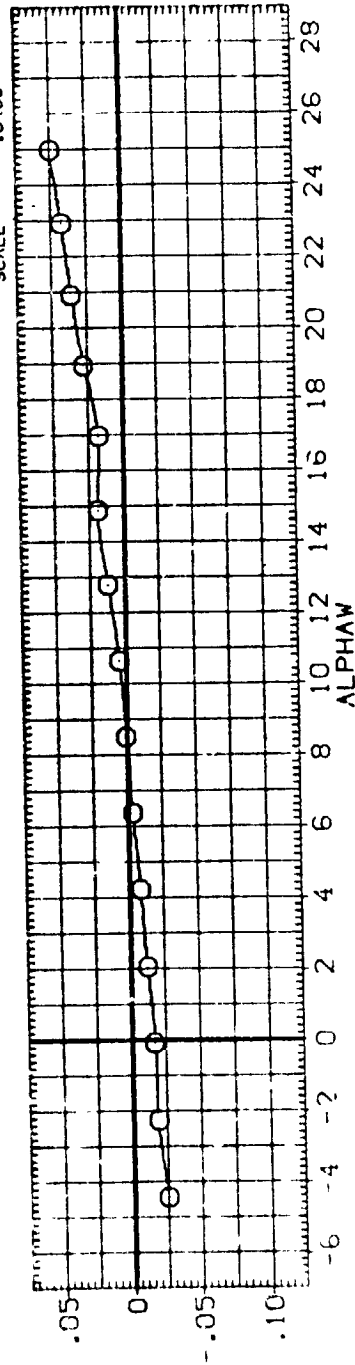
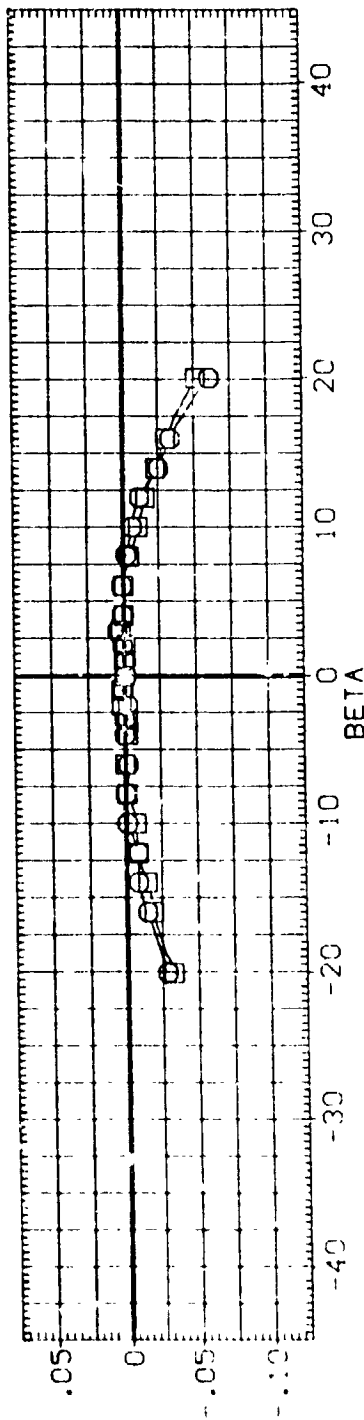


FIG.51 TANK AIRLOADS IN PITCH, CONF.5, RUDDER=0.0

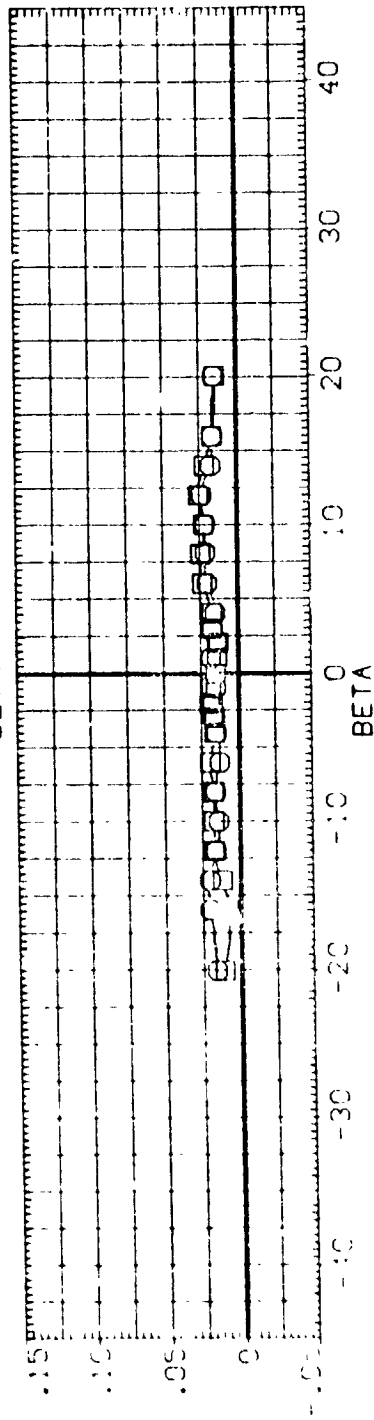
(A53) = 36.03



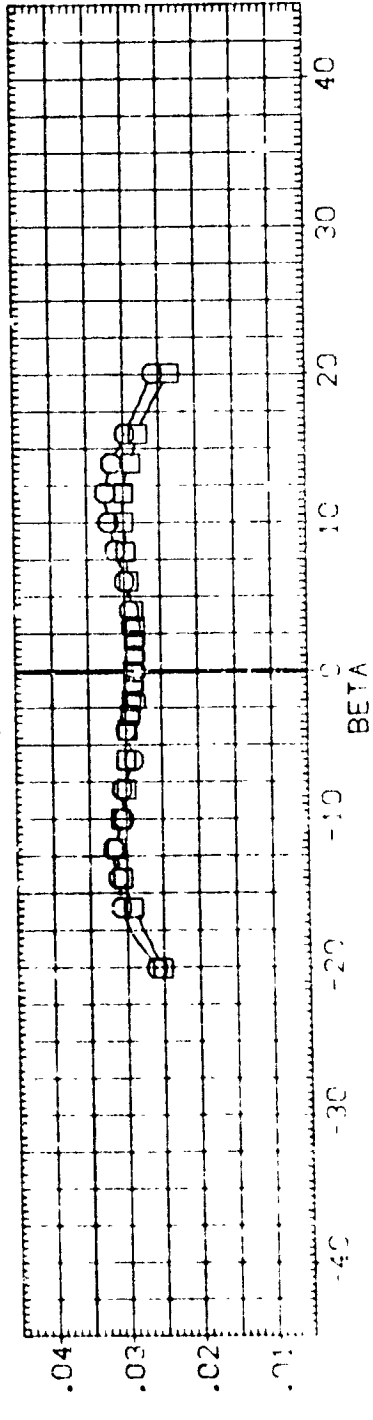
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
CA0078	B	CA110WAL1146/INTJPM15.7V9.4	AT70AT71 128.1	AT70AT71 128.1	6.000	-1.930	SREF 5500.0000 SQ.FT.
CA0073	B	CA110WAL1146/INTJPM15.1	AT70AT71 128.1	AT70AT71 128.1	6.000	-1.930	LREF 327.7800 IN.
							BREF 2348.0000 IN.
							XMRP 1348.0000 IN. XT
							YMRP .0000 IN. YT
							ZMRP 402.0000 IN. ZT
							SCALE .0400



CNL



CLM



CAT

FIG.52 EFFECT 747 FINS, HOB. TAIL ON TANK LOADS IN YAW, CONF. 1, ALPHA=6.38, ELEV=0.0

DATA SET SYMB:	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(A00078)	CALLUWA1146(IN) K1H15.7V8.4	6.000	-1.930	.000	.000	SREF 5500.0000 SQ.FT.
(AC0073)	CALLUWA1146(IN) K1H15.1	6.000	-1.930			LRUF 327.7800 IN.
						BREF 2348.0000 IN.
						YMRP 1348.0000 IN.
						ZMRP .0000 IN.
						ZMRP 402.0000 IN.
						SCALE .0400

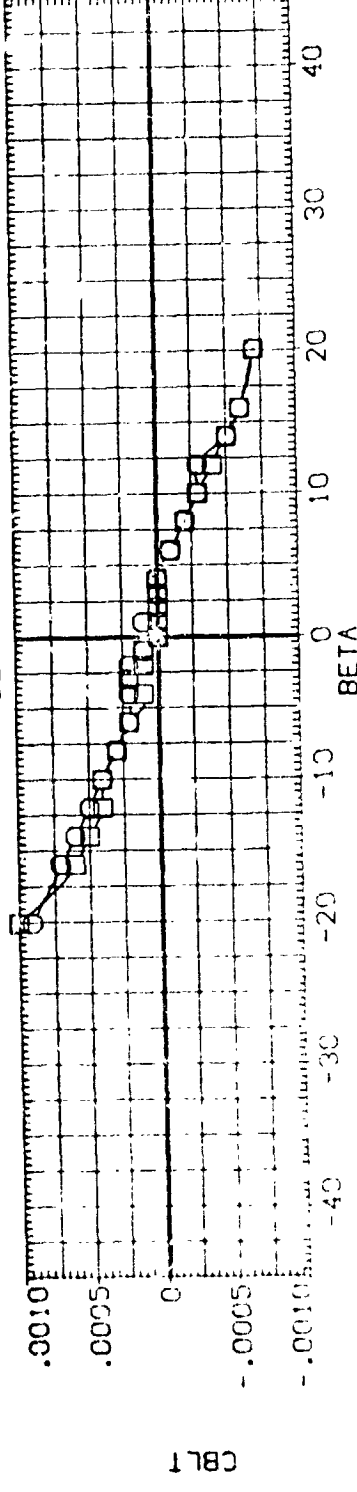
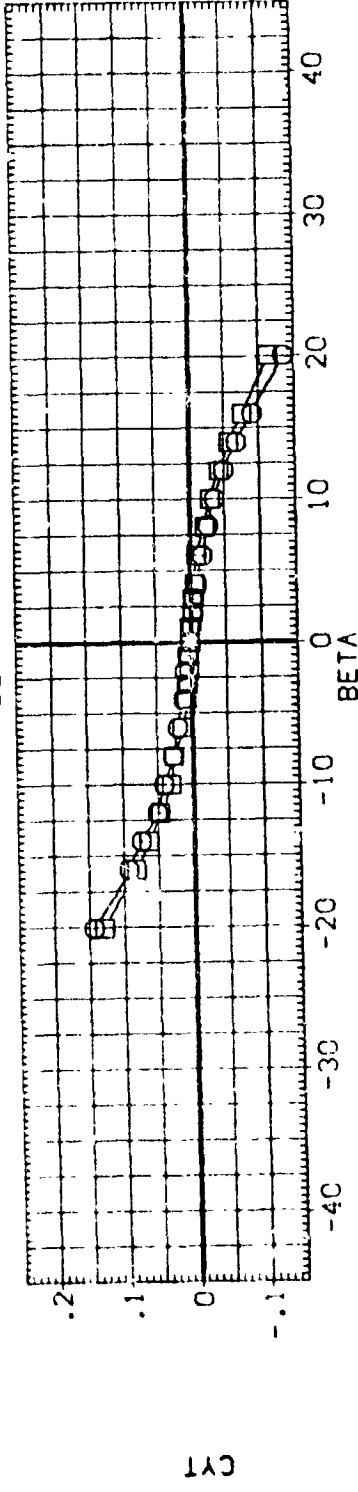
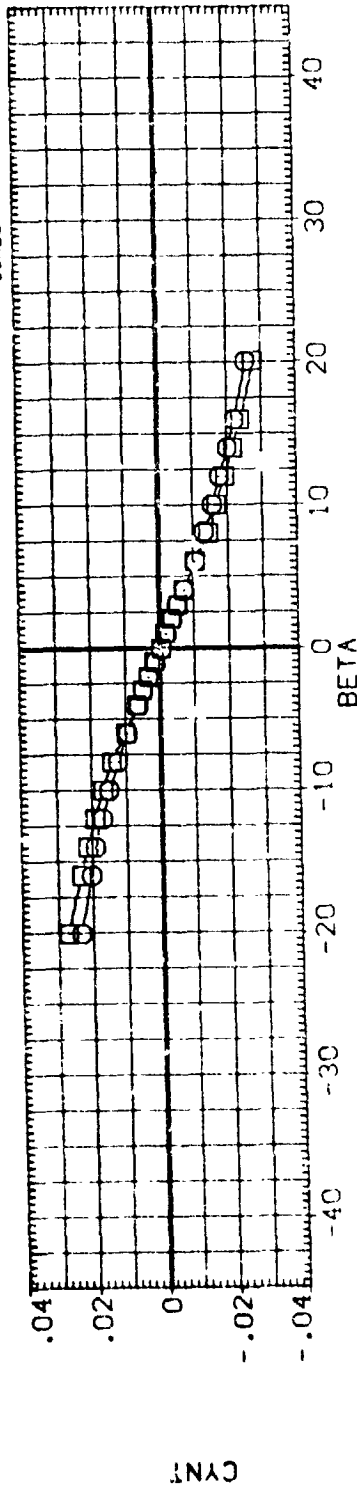


FIG.52 EFFECT 747 FINS,HOR.TAIL ON TANK LOADS IN YAW,CONF.1,ALPHA=6.38,ELEV=0.0

DATA SET SYMBOL	CONF IGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(AG0077)	CALLUWAL1146(NT)K1H15.7V9.4	2.000	-1.930	.000	.000	SREF 5500.0000 SO.FT.
(AG0078)	CALLUWAL1146(NT)K1H15.7V9.4	6.000	-1.930	.000	.000	LREF 327.7800 IN.
(AG0079)	CALLUWAL1146(NT)K1H15.7V9.4	12.000	-1.930	.000	.000	BREF 2348.0000 IN.
						XMRP 1348.0000 IN. YI
						YMRP .0000 IN. YI
						ZMRP 402.0000 IN. ZI
						SCALE .0400

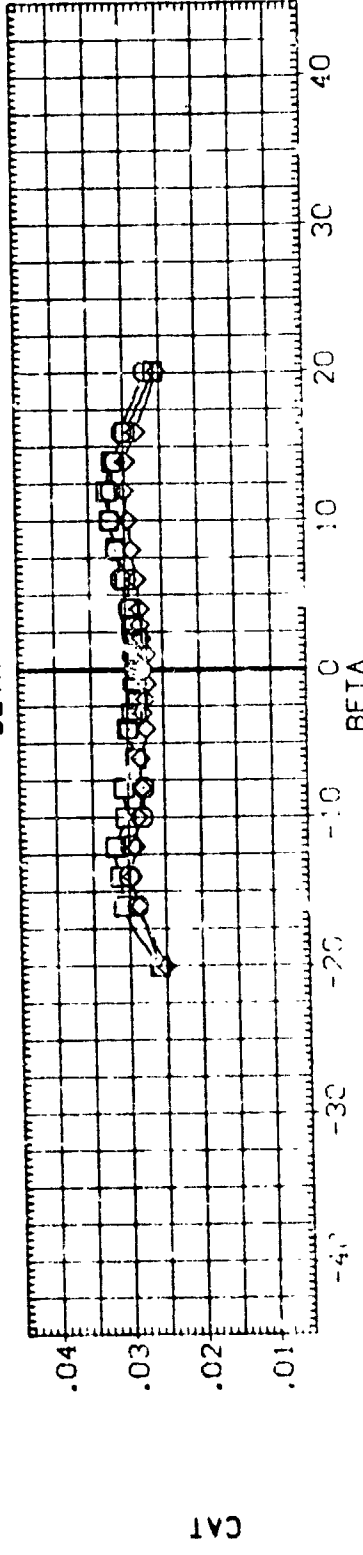
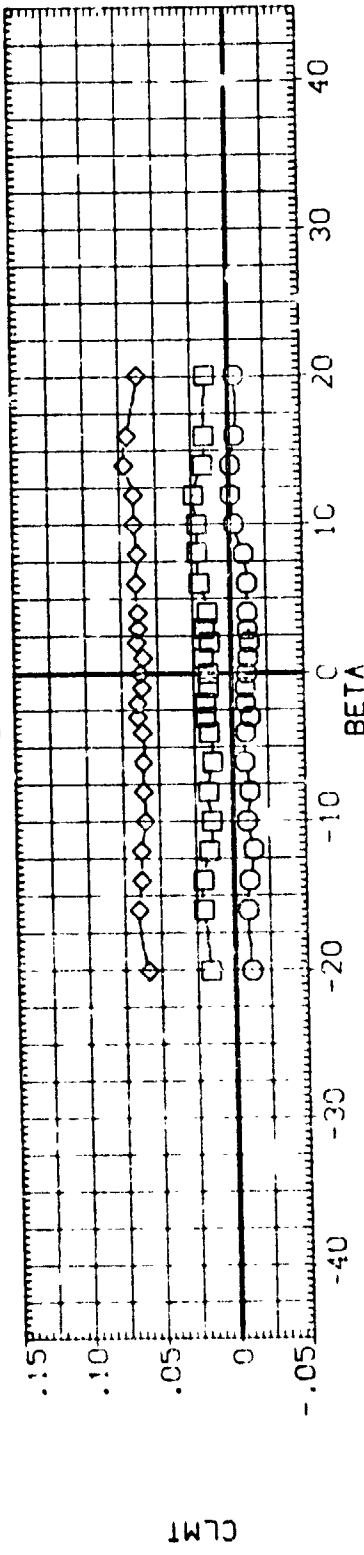
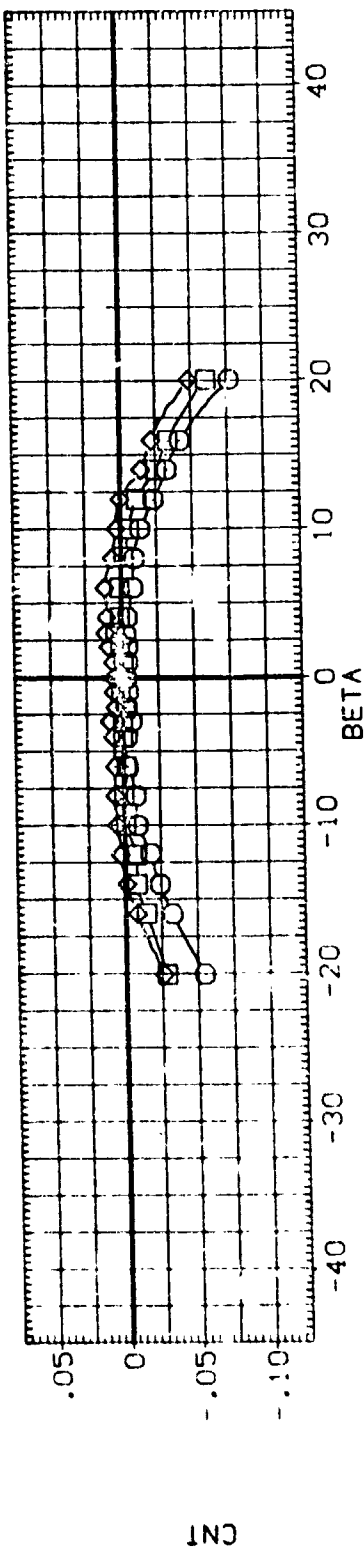


FIG.53 EFFECT OF ANGLE OF ATTACK ON TANK AIR LOADS IN YAW, CONF.1, ELEVATORS=0.0

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	AT70AT71	T28.1	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(AG0077)	CA110VAL1146CINT)KIH15.7V9.4	AT70AT71	T28.1	2.000	-1.930	.000	.000	SREF 5500.0000 SO.FT.
(AG0078)	CA110VAL1146CINT)KIH15.7V9.4	AT70AT71	T28.1	6.000	-1.930	.000	.000	LREF 327.7800 IN.
(AG0079)	CA110VAL1146CINT)KIH15.7V9.4	AT70AT71	T28.1	12.000	-1.930	.000	.000	BREF 2348.0000 IN.
								YMRP 1348.0000 IN. XT
								ZMRP .0000 IN. YT
								SCALE 402.0000 IN. ZT

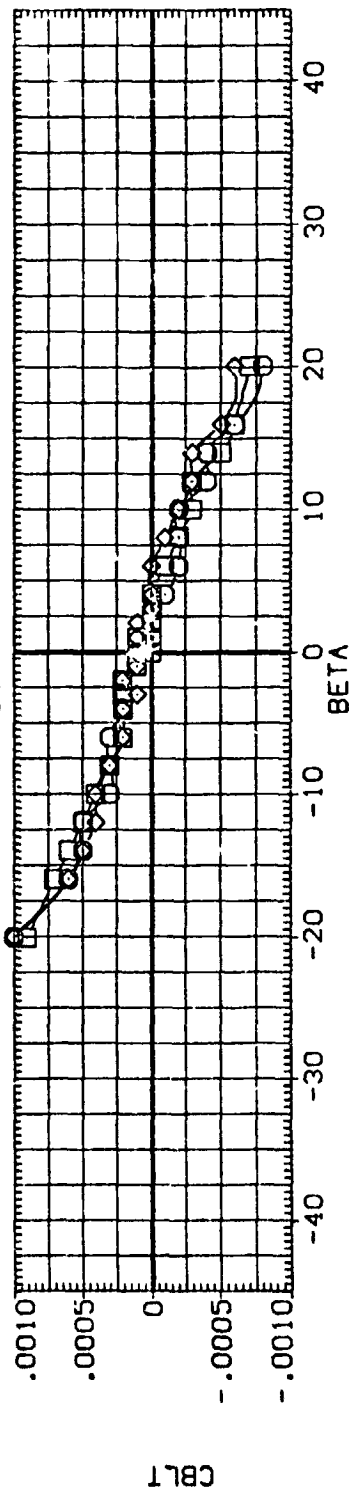
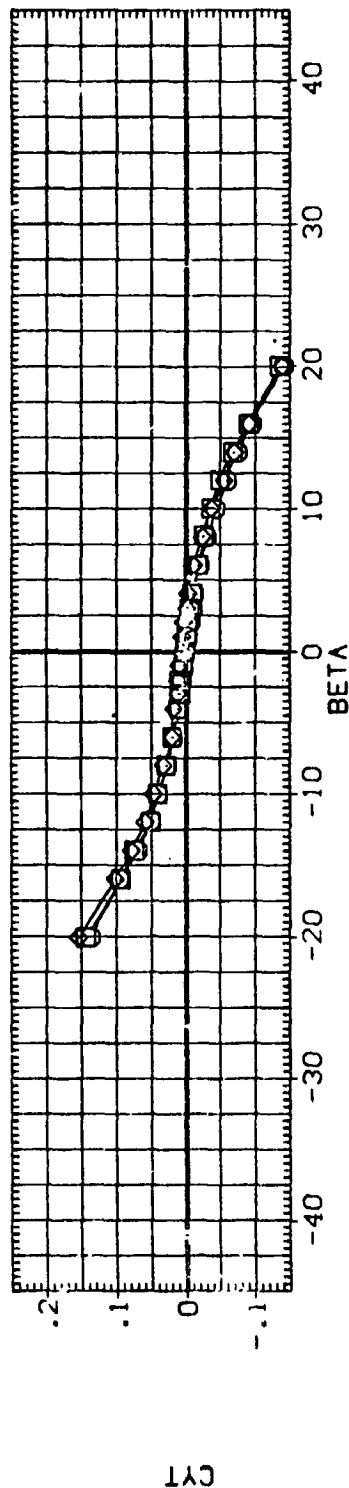
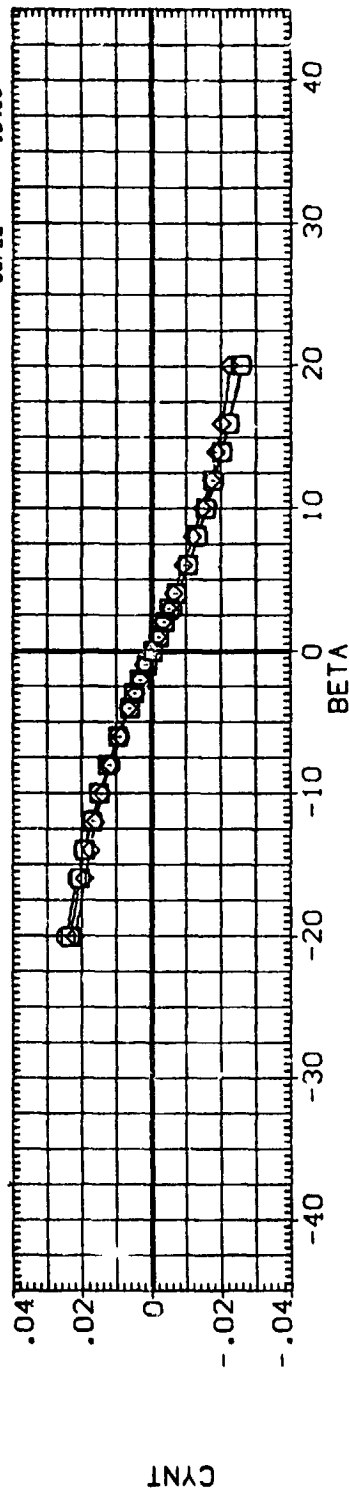


FIG.53 EFFECT OF ANGLE OF ATTACK ON TANK AIR LOADS IN YAW, CONF.1, ELEVATORS=0.0  
(A)Q = 36.23

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
(AG0100)	CALLUWAL1146(INT)K1H15.6V9.1C1V11	2.000	-1.960	.000	.000	SREF 5500.0000 SQ.FT.
(AG0101)	CALLUWAL1146(INT)K1H15.6V9.1C1V11	6.000	-1.960	.000	.000	LREF 327.7800 IN.
(AG0102)	CALLUWAL1146(INT)K1H15.6V9.1C1V11	12.000	-1.960	.000	.000	BREF 2348.0000 IN.
						XMRP 1348.0000 IN. XT
						YMRP .0000 IN. YT
						ZMRP 402.0000 IN. ZT
						SCALE .0400

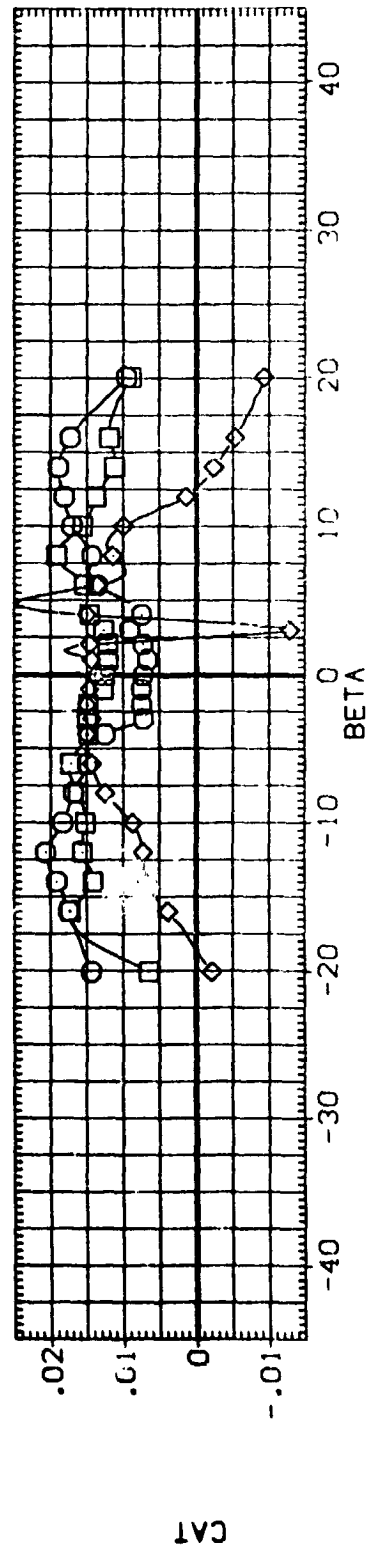
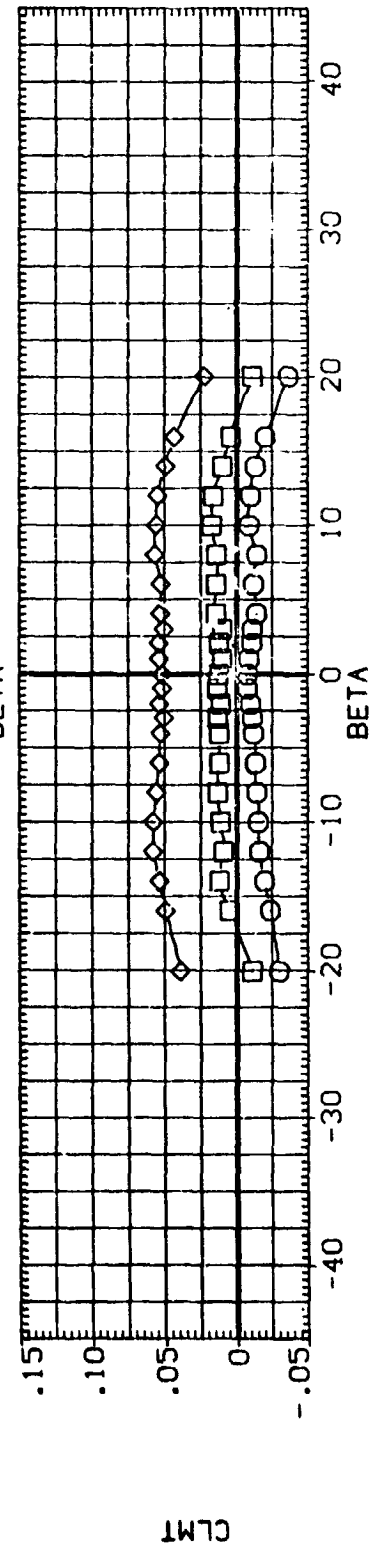
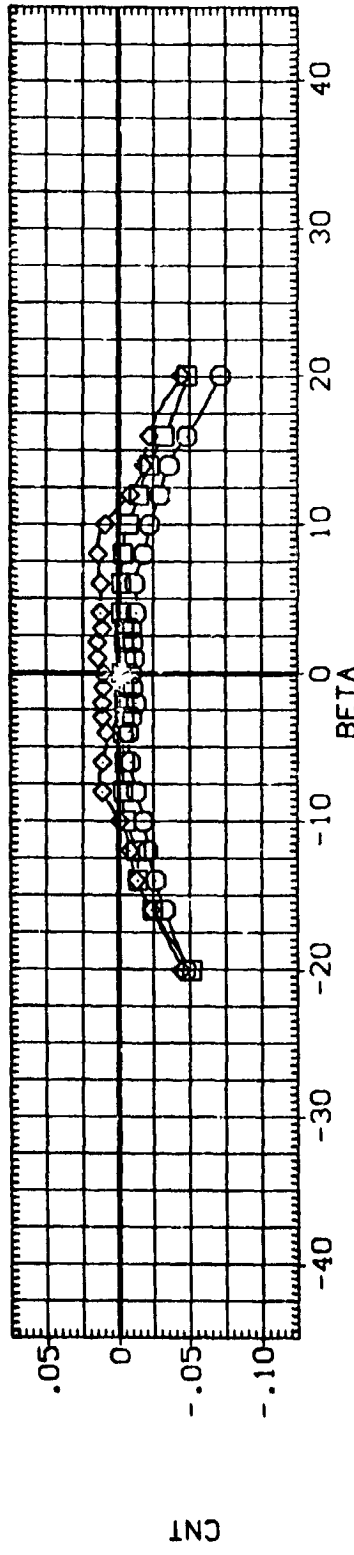


FIG.54 EFFECT OF ANGLE OF ATTACK ON TANK AIR LOADS IN YAW. CONF.5, ELEVATORS=0.0  
(A) = 36.30 PAGE 99

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	STAB	RUD-U	RUD-L	REFERENCE INFORMATION
( AG0100 )	CALLUWAL1146(INT)KIH15.6V9.1C1V11 AT86AT87 T28.1	2.000	-1.960	.000	.000	SREF 5500.0000 SQ.FT.
( AG0101 )	CALLUWAL1146(INT)KIH15.6V9.1C1V11 AT86AT87 T28.1	6.000	-1.960	.000	.000	LREF 327.7800 IN.
( AG0102 )	CALLUWAL1146(INT)KIH15.6V9.1C1V11 AT86AT87 T28.1	12.000	-1.960	.000	.000	BREF 2348.0000 IN.
						XMRP 1348.0000 IN. XT
						YMRP .0000 IN. YT
						ZMRP 402.0000 IN. ZT
						SCALE .0400

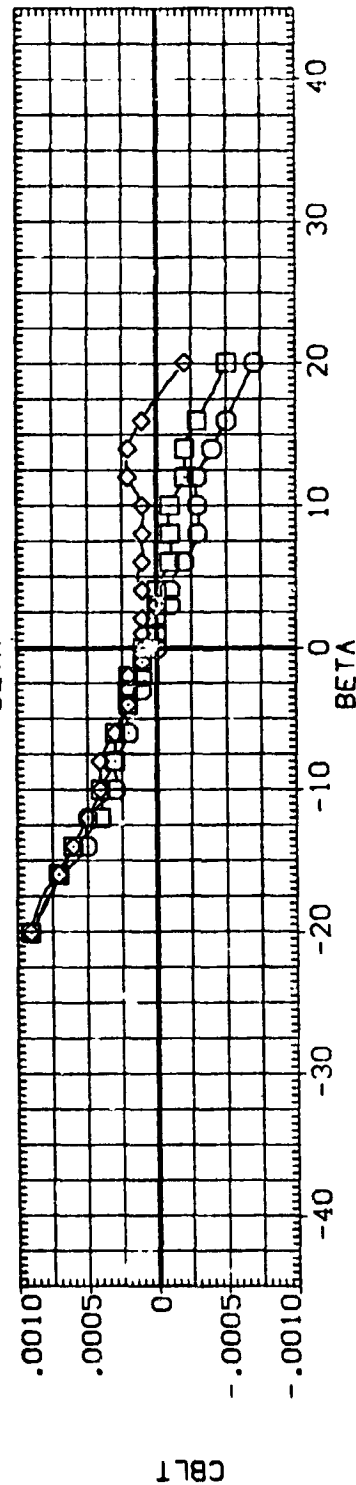
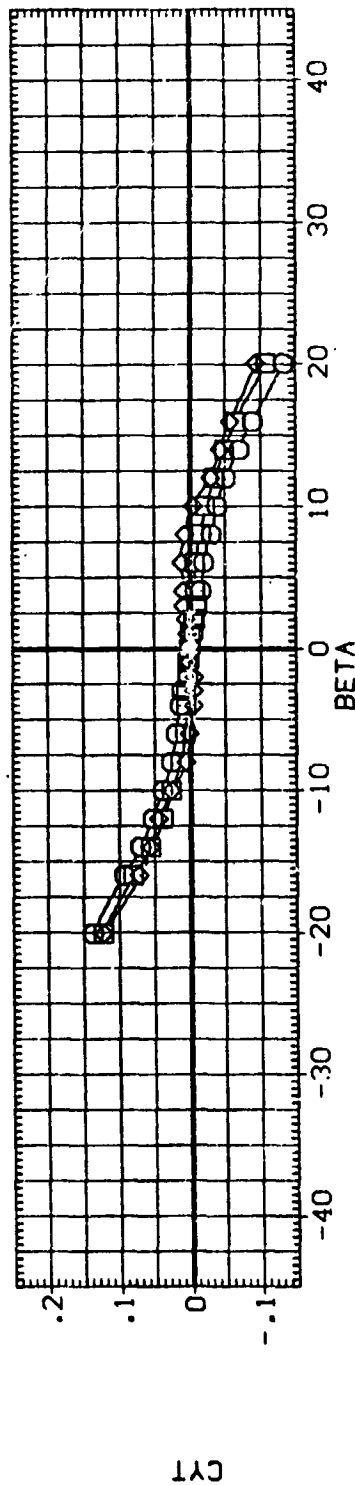
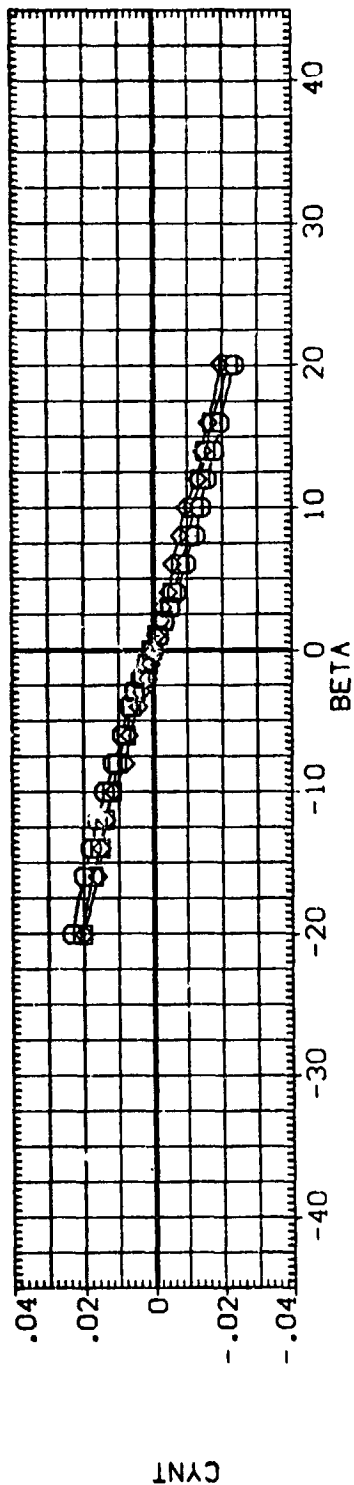


FIG.54 EFFECT OF ANGLE OF ATTACK ON TANK AIR LOADS IN YAW, CONF.5, ELEVATORS=0.0  
 ( ) = 36.30

APPENDIX  
TABULATED SOURCE DATA

Tabulations of plotted data are available on request from  
Data Management Services.

**PRECEDING PAGE BLANK NOT FILMED**

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 1  
(RG0001) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

CALLUHAL1146(EXT)KI VS.1

PARAMETRIC DATA

BETA = .000 RUD-U = .000  
RUD-L = .000

RUN NO. 1/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.520	-4.360	.00000	-.35160	.06770	-.05440	-.00340	.00240	.00110
35.500	-2.170	.00000	-.17570	.04670	-.04990	-.00090	.00170	.00170
35.480	.030	.00000	-.00350	.03740	-.04160	.00120	.00110	.00180
35.460	2.150	.00000	.15850	.03550	-.02980	.00080	.00120	.00120
35.440	4.270	.00000	.31620	.03910	-.01200	.00080	.00150	.00130
35.420	6.420	.00000	.48190	.04670	.00260	.00200	.00110	.00140
35.400	8.600	.00000	.63570	.05840	.02030	.00270	.00070	.00020
35.380	10.770	.00000	.77300	.08320	.05310	.00370	.00060	.00050
35.360	12.890	.00000	.90590	.12920	.07800	.00410	.00080	.00050
35.340	15.010	.00000	1.02040	.19240	.09650	.00160	.00120	.00020
35.320	17.090	.00000	1.11630	.26790	.11710	.00140	.00170	.00310
35.300	19.120	.00000	1.15840	.33450	.12590	.00020	.00160	.00110
35.280	21.120	.00000	1.13910	.38900	.14600	.00190	.00140	.00030
35.260	23.070	.00000	1.13770	.44050	.15070	.00140	.00070	.00100
35.240	25.010	.00000	1.13000	.48540	.15830	.00480	.00010	.00150
GRADIENT		.00000	.07744	-.00319	.00485	.00047	-.00011	-.00000

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OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1115E )

PAGE 2

CALLUHAL11146(EXT)K1H15.1V9.1

(RG0002) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = .000  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000

RUN NO. 2/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.530	-4.440	.00000	-4.2630	.07170	.16280	-.00260	.00250	.00080
35.500	-2.260	.00000	-.22940	.04920	.09890	-.00070	.00170	.00180
35.490	-.070	.00000	-.03790	.03870	.04470	.00030	.00170	.00200
35.490	2.080	.00000	.14840	.03640	-.00020	.00160	.00160	.00110
35.490	4.230	.00000	.32320	.04090	-.04390	.00130	.00170	.00180
35.490	6.380	.00000	.49990	.05030	-.09550	.00140	.00130	.00130
35.490	8.530	.00000	.67540	.06470	-.14520	.00350	.00070	.00080
35.510	10.660	.00000	.82750	.09150	-.16360	.00420	.00050	.00100
35.570	12.790	.00000	.97360	.14040	-.17540	.00470	.00070	.00020
35.660	14.900	.00000	1.09990	.20710	-.19480	.00480	.00070	.00060
35.780	16.970	.00000	1.21600	.28810	-.21940	.00320	.00160	.00010
35.900	18.960	.00000	1.26340	.36160	-.25380	.00450	.00140	-.00220
36.010	20.910	.00000	1.26020	.42280	-.29690	.00190	.00130	.00010
36.120	22.940	.00000	1.29950	.49220	-.42340	.00350	.00010	.00170
36.230	24.970	.00000	1.32550	.55660	-.55730	.00440	.00080	.00130
GRADIENT		.00000	.08557	-.00344	-.02365	.00047	-.00008	.00006

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 3

CA11UHAL1146(EXTIKIH15.IV9.1)

(R00003) 14 NOV 75

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

BETA = .000 STAB = -2.000  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.530	-4.440	.0000	-1.44370	.07280	.24900	-.00310	.00250	.00079
35.500	-2.260	.0000	-.25130	.05000	.18800	-.00300	.00240	.00100
35.490	-.070	.0000	-.05790	.03890	.12820	.00010	.00140	.00150
35.490	2.080	.0000	.12740	.03630	.08090	.00040	.00140	.00100
35.490	4.230	.0000	.29830	.03980	.04330	.00100	.00180	.00170
35.490	6.380	.0000	.47640	.04800	-.00160	.00230	.00130	.00120
35.490	8.530	.0000	.65350	.06130	-.04550	.00180	.00150	.00110
35.510	10.650	.0000	.80350	.08730	-.16510	.00360	.00070	.00070
35.570	12.780	.0000	.94390	.13440	-.08010	.00600	.00030	.00090
35.660	14.900	.0000	1.07410	.20020	-.10130	.00470	.00080	.00040
35.770	16.970	.0000	1.19060	.26140	-.12110	.00370	.00150	.00010
35.890	18.960	.0000	1.24010	.35410	-.15460	.00390	.00120	-.00300
36.000	20.910	.0000	1.24100	.41510	-.20300	.00410	.00110	.00010
36.110	22.940	.0000	1.27550	.48070	-.33820	.00370	.00040	.00140
36.220	24.970	.0000	1.30540	.54570	-.47360	.00660	-.00050	.00180
GRADIENT		.0000	.08592	-.00369	-.02393	.00054	-.00011	.00009

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA1: ( UNAL1146 )

PAGE 4

CA1UNAL1146(EXT)KIH15.1V9.1

(RG0004) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
 LREF = 327.7800 IN.  
 BREF = 2348.0000 IN.  
 SCALE = .0400

XPRP = 1339.9100 IN. XC  
 YPRP = .0300 IN. YC  
 ZPRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHAM = 2.080 STAB = -2.070  
 ELV-IB = .000 ELV-OB = .000  
 RUO-U = .000 RUO-L = .000

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
35.640	-20.000	2.08000	.20870	.01320	-.07780	.34390	-.04820	.04680
35.570	-16.000	2.08000	.19140	.01580	-.03770	.27930	-.04310	.04080
35.550	-14.000	2.08000	.17610	.01910	-.01850	.24250	-.03780	.03710
35.530	-12.000	2.08000	.16430	.02210	.00060	.20580	-.03190	.03260
35.510	-10.000	2.08000	.15160	.02550	.02110	.16900	-.02550	.02620
35.500	-8.000	2.08000	.14750	.02880	.03690	.13210	-.01930	.02190
35.490	-6.000	2.08000	.13540	.03180	.05630	.09910	-.01360	.01690
35.490	-4.000	2.08000	.12970	.03400	.06970	.06550	.00840	.01130
35.490	-3.000	2.08000	.12770	.03520	.07570	.05130	.00620	.00910
35.490	-2.000	2.08000	.12690	.03570	.07820	.03340	-.00350	.00680
35.490	-1.000	2.08000	.12240	.03600	.08090	.01700	-.00080	.00370
35.490	.000	2.08000	.12580	.03610	.08090	.00160	.00140	.00120
35.490	1.000	2.08000	.12530	.03610	.07930	-.01730	.00480	-.00090
35.490	2.000	2.08000	.12520	.03590	.07570	-.03260	.00710	-.00360
35.490	3.000	2.08000	.12630	.03530	.07380	-.04880	.00900	-.00640
35.490	4.000	2.08000	.13270	.03490	.06780	-.06540	.01160	-.00940
35.490	6.000	2.08000	.13570	.03250	.05430	-.09920	.01670	-.01390
35.500	8.000	2.08000	.14600	.02940	.03660	-.13400	.02260	-.01990
35.510	10.000	2.08000	.15440	.02500	.01390	-.17050	.02950	-.02510
35.530	12.000	2.08000	.16570	.02140	-.00610	-.20710	.03560	-.03040
35.550	14.000	2.08000	.17600	.01840	-.02460	-.24320	.04130	-.03490
35.570	16.000	2.08000	.18800	.01480	-.04150	-.27520	.04520	-.03900
35.630	20.000	2.08000	.20650	.01080	-.07900	-.33630	.05050	-.04480
	GRADIENT	-.00000	.00022	.00007	-.00033	-.01650	.00254	-.00258

RUN NO. 4/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 5

(RG0005) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7600 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -2.070  
ELV-IB = .000 ELV-OB = .000  
RUO-U = .000 RUO-L = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
35.640	-20.000	6.38000	.53830	.03080	-.19920	.34270	-.04980	.05500
35.570	-16.000	6.38000	.52640	.03040	-.14240	.27570	-.04340	.04900
35.550	-14.000	6.38000	.51810	.03300	-.11640	.23970	-.03820	.04370
35.530	-12.000	6.38000	.50860	.03600	-.08820	.20220	-.03160	.03850
35.510	-10.000	6.38000	.49840	.03860	-.06550	.16210	-.02450	.03260
35.500	-8.000	6.38000	.49410	.04210	-.04410	.12750	-.01850	.02590
35.490	-6.000	6.38000	.48400	.04420	-.02350	.09360	-.01240	.01980
35.490	-4.000	6.38000	.48100	.04620	-.01040	.06270	-.00750	.01360
35.490	-3.000	6.38000	.48020	.04680	-.00520	.04840	-.00540	.01050
35.490	-2.000	6.38000	.47820	.04740	-.00340	.03210	-.00300	.00720
35.490	-1.000	6.38000	.47680	.04750	-.00020	.01750	-.00120	.00400
35.490	0.000	6.38000	.47830	.04800	-.00110	.00070	-.00120	.00140
35.490	1.000	6.38000	.47530	.04800	-.00150	-.01460	.00390	-.00190
35.490	2.000	6.38000	.46070	.04790	-.00330	-.03040	.00660	-.00520
35.490	3.000	6.38000	.47830	.04740	-.00710	-.04500	.00800	-.00850
35.490	4.000	6.38000	.48050	.04680	-.01310	-.06120	.01050	-.01110
35.490	6.000	6.38000	.48570	.04450	-.02750	-.09270	.01520	-.01790
35.500	8.000	6.38000	.49210	.04250	-.05150	-.12810	.02170	-.02460
35.510	10.000	6.38000	.50450	.03910	-.07330	-.16310	.02750	-.03070
35.530	12.000	6.38000	.50890	.03620	-.09720	-.20000	.03430	-.03660
35.550	14.000	6.38000	.51780	.03260	-.12220	-.23740	.04010	-.04190
35.570	16.000	6.38000	.52120	.03010	-.14390	-.27230	.04540	-.04650
35.640	20.000	6.38000	.53750	.02840	-.19910	-.33710	.05160	-.05310
GRADIENT		.00000	-.00007	.00009	-.00025	-.01555	.00227	-.00311

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 6

CALL UMAL1146(EXT)KIH15.1V9.1

(RG0006) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0403

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 12.790 STAB = -2.070  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000

RUN NO. 6/ 0 RN/I. = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
35.750	-20.000	12.78000	.95230	.12700	-.37840	.35920	-.04990	.04950
35.680	-16.000	12.78000	.95170	.12560	-.26990	.28280	-.04330	.04220
35.640	-14.000	12.79000	.94930	.12570	-.22020	.24200	-.03770	.03780
35.620	-12.000	12.79000	.94260	.12610	-.17860	.20310	-.03170	.03260
35.600	-10.000	12.79000	.94850	.12840	-.15090	.16590	-.02520	.02700
35.590	-8.000	12.79000	.94600	.12970	-.13350	.13110	-.01820	.02150
35.580	-6.000	12.79000	.94920	.13210	-.11680	.09340	-.01180	.01670
35.570	-4.000	12.79000	.95270	.13390	-.09930	.06550	-.00850	.01100
35.570	-3.000	12.79000	.94850	.13430	-.09170	.05050	-.00640	.00850
35.570	-2.000	12.79000	.94940	.13450	-.08350	.03480	-.00410	.00580
35.570	-1.000	12.79000	.94360	.13410	-.07990	.02020	-.00190	.00250
35.570	.000	12.79000	.94830	.13440	-.07870	.00470	.00080	.00030
35.560	1.000	12.79000	.95150	.13450	-.08180	-.01090	.00300	-.00260
35.560	2.000	12.79000	.95100	.13380	-.08490	.02670	.00570	-.00550
35.570	3.000	12.79000	.95060	.13360	-.09120	-.04180	.00760	-.00770
35.570	4.000	12.79000	.94730	.13250	-.10010	-.05500	.00940	-.01040
35.570	6.000	12.79000	.95050	.13070	-.12150	-.08380	.01330	-.01670
35.580	8.000	12.79000	.95490	.12870	-.13710	-.12180	.02010	-.02250
35.590	10.000	12.79000	.95280	.12570	-.15900	-.15700	.02640	-.02830
35.610	12.000	12.79000	.95120	.12310	-.18670	-.19380	.03290	-.03350
35.630	14.000	12.79000	.95690	.12170	-.22700	-.23120	.03910	-.03940
35.660	16.000	12.78000	.95300	.12130	-.27100	-.27190	.04520	-.04400
35.740	20.000	12.78000	.95810	.12290	-.36670	-.34440	.05370	-.04860
GRADIENT		.00000	-.00007	-.00014	-.00011	-.01522	.00230	-.00270

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 7

CALL UHAL1146(EXT)KIM15.1V9.1

(RG0007) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 9500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -2.070  
 ELV-IB = .000 ELV-OB = .000  
 RUO-U = 25.000 RUO-L = .000

RUN NO 7/ 0 RN/L = .90 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CO	CLM	CY	CLN	CSL
35.670	-20.000	6.38000	.53230	.03510	-.18340	.37830	-.06900	.05840
35.600	-16.000	6.38000	.51730	.03590	-.12230	.31200	-.06360	.05170
35.570	-14.000	6.38000	.51220	.03780	-.09930	.27780	-.06040	.04730
35.550	-12.000	6.38000	.50680	.04050	-.07520	.24680	-.05680	.04270
35.530	-10.000	6.38000	.49710	.04320	-.05440	.20890	-.05130	.03750
35.520	-8.000	6.38000	.48540	.04630	-.03470	.17390	-.04520	.03110
35.510	-6.000	6.38000	.48150	.04890	-.01410	.14070	-.03930	.02390
35.500	-4.000	6.38000	.48110	.05080	-.00280	.10950	-.03410	.01810
35.500	-3.000	6.38000	.47590	.05160	.00110	.09510	-.03240	.01510
35.500	-2.000	6.38000	.47640	.05270	.00600	.08240	-.03120	.01170
35.500	-1.000	6.38000	.47600	.05340	.01270	.06630	-.02950	.00940
35.500	.000	6.38000	.47360	.05400	.01410	.05170	-.02730	.00650
35.500	1.000	6.38000	.47610	.05390	.01830	.03470	-.02460	.00280
35.500	2.000	6.38000	.47750	.05350	.01950	.01680	-.02180	-.00120
35.500	3.000	6.38000	.47520	.05330	.01750	.00190	-.01940	-.00300
35.500	4.000	6.38000	.47610	.05240	.01390	-.01250	-.01710	-.00600
35.500	5.000	6.38000	.48290	.05090	.00010	-.04550	-.01180	-.01340
35.500	6.000	6.38000	.49130	.04800	-.02330	-.08180	-.00520	-.01940
35.510	10.000	6.38000	.49480	.04440	-.04650	-.11580	.00120	-.02610
35.520	12.000	6.38000	.50660	.04090	-.07450	-.15330	.01020	-.03210
35.540	14.000	6.38000	.51510	.03660	-.10100	-.19810	.01820	-.03790
35.560	16.000	6.38000	.51810	.03260	-.13020	-.23760	.02530	-.04260
35.620	20.000	6.38000	.53800	.03010	-.19320	-.30220	.03200	-.04980
		.00300	-.00031	.00023	.00248	-.01551	.00218	-.00307

GRADIENT

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UNCLING )

PAGE 8

CAL11UAL11461EXTIKIN15.1V9.1

(RG0008) ( 14 NOV 75 )

REFERENCE DATA

SREF = 9500.0000 50.FT.  
LREF = 32.7800 IN.  
BREF = 23.8.0000 IN.  
SCALE = .0400

XPRP = 1339.9100 IN. XC  
YPRP = .0000 IN. YC  
ZPRP = 190.7500 IN. ZC

PARAMETRI DATA

ALPHA = 6.380 SYAP = -2.070  
ELV-18 = .000 ELV-08 = .000  
RUD-U = 25.000 RUD-L = 25.000

RUN NO.	B/0	RM/L	GRADIENT INTERVAL	CY	CLM	CLN	CSL
0	BETA	ALPHA	CL	CO	CLM	CLN	CSL
35.700	-20.000	6.380000	.52400	.04540	-.14290	-.07320	.05620
35.630	-16.000	6.380000	.51610	.04280	-.10290	-.07800	.05180
35.600	-14.000	6.380000	.51270	.04290	-.08780	-.07610	.04760
35.570	-12.000	6.380000	.50690	.04460	-.07120	-.07150	.04290
35.550	-10.000	6.380000	.49990	.04700	-.05210	-.06620	.03740
35.530	-8.000	6.380000	.49240	.04920	-.03510	-.05960	.03050
35.510	-6.000	6.380000	.48560	.05130	-.01800	-.04390	.02460
35.510	-4.000	6.380000	.48420	.05420	-.00920	-.04930	.01860
35.500	-3.000	6.380000	.48120	.05520	-.00220	-.04880	.01620
35.500	-2.000	6.380000	.48370	.05640	.00310	-.04150	.01250
35.500	-1.000	6.380000	.48070	.05740	.00770	-.04770	.00980
35.500	.000	6.380000	.47840	.05860	.01150	-.04680	.00730
35.500	1.000	6.380000	.47700	.05850	.01840	-.04370	.00430
35.500	2.000	6.380000	.47880	.05810	.02020	-.04040	.00100
35.500	3.000	6.380000	.47930	.05790	.01920	-.03790	-.00230
35.500	4.100	6.380000	.48050	.05730	.01710	-.03600	-.00580
35.500	6.000	6.380000	.48160	.05550	.00530	-.03020	-.01170
35.500	8.000	6.380000	.49160	.05230	-.01520	-.02410	-.01950
35.500	10.000	6.380000	.49770	.04940	-.03930	-.01660	-.02430
35.520	12.000	6.380000	.50310	.04510	-.06400	-.00810	-.03100
35.530	14.000	6.380000	.51580	.04110	-.08900	.00040	-.03710
35.550	16.000	6.380000	.52180	.03610	-.11920	.00760	-.04220
35.550	18.000	6.380000	.53780	.03220	-.18470	.01660	-.04950
35.610	20.000	6.380000	.53780	.00411	-.00354	.00175	-.00301
	GRADIENT	-.00000	-.00056	000.1			

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 9

(RG0009) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 3500.0000 SQ.FT.  
 LREF = 327.7800 IN.  
 SREF = 2348.0000 IN.  
 SCALE = .0400

XREF = 1339.9100 IN. XC  
 YREF = .0000 IN. YC  
 ZREF = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHAM = 6.380 STAB = -2.070  
 ELV-18 = .000 ELV-08 = .000  
 RUO-U = .000 RUO-L = 25.000

GRADIENT	20.000	16.000	12.000	8.000	4.000	0.000	4.000	8.000	12.000	16.000	20.000
BETA	-20.000	-16.000	-12.000	-8.000	-4.000	0.000	4.000	8.000	12.000	16.000	20.000
ALPHAM	6.380000	6.380000	6.380000	6.380000	6.380000	6.380000	6.380000	6.380000	6.380000	6.380000	6.380000
CL	.52550	.51920	.51540	.50550	.49930	.49340	.48880	.48290	.47630	.47780	.47610
CD	.03920	.03610	.03640	.03910	.04110	.04470	.04720	.05060	.05120	.05210	.05210
CLM	-.16340	-.12500	-.10810	-.08590	-.06520	-.04330	-.02670	-.01480	-.00930	-.00100	.00190
CY	.36090	.31140	.27810	.24240	.20380	.16870	.14230	.10430	.08790	.05620	.04190
CLN	-.05880	-.06160	-.05840	-.05260	-.04630	-.03990	-.03320	-.02840	-.02630	-.02160	-.01970
CSL	.05420	.04900	.04510	.04020	.03450	.02750	.02190	.01530	.01240	.00600	.00280
GRADIENT	-.00028	-.00028	-.00028	-.00028	-.00028	-.00028	-.00028	-.00028	-.00028	-.00028	-.00028

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 OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 10

CALLUVAL1146(EXT)K1H15.6V9.1

(R00010) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAC = -1.920  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUC-L = .000

RUN NO.		10/ 0	RN/L = .00	GRADIENT INTERVAL = -5.00/ 5.00	
ALPHA		BETA	CL	CD	CLM
35.530	-4.440	.0000	-.45760	.07440	.28350
35.560	-2.260	.0000	-.26120	.05090	.21510
35.490	-.070	.0000	-.06390	.04000	.15040
35.490	2.080	.0000	.12010	.03720	.09560
35.490	4.230	.0000	.29840	.04110	.05170
35.490	6.380	.0000	.48250	.04960	-.00180
35.490	8.530	.0000	.65290	.06270	-.04970
35.510	10.660	.0000	.80820	.08890	-.08160
35.570	12.790	.0000	.95600	.13680	-.09710
35.660	14.900	.0000	1.07700	.20070	-.11310
35.770	16.970	.0000	1.19570	.28300	-.12600
35.880	18.960	.0000	1.24370	.35300	-.14780
35.990	20.910	.0000	1.23520	.41210	-.18490
36.100	22.940	.0000	1.27470	.47970	-.30650
36.220	24.970	.0000	1.30800	.54550	-.44550
GRADIENT		.0000	.08734	-.00371	-.02690
CY		.00080	.00730	.00640	.00370
CLN		.00100	.00110	.00020	.00000
CSL		.00130	.00220	.00150	.00230
CLM		.00070	.00070	.00010	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
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CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000
CLN		.00110	.00010	.00020	.00000
CSL		.00130	.00050	.00020	.00030
CLM		.00070	.00010	.00020	.00000

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 11

(RG0011) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

BETA = .000 STAB = -1.920  
ELV-18 = -23.000 ELV-08 = -23.000  
RUD-U = .000 RUD-L = .000

RUN NO.	11/ 0	RN/L	.00	GRADIENT INTERVAL	= -5.00/ 5.00	
ALPHAM	BETA	CL	CLM	CY	CLN	CSL
-4.440	.00000	-.58140	.09490	-.00070	.00080	.00120
-2.260	.00000	-.39840	.05750	.00150	.00070	.00160
-.070	.00000	-.19780	.05300	.00080	.00110	.00130
2.080	.00000	-.01490	.04680	.00160	.00090	.00150
4.230	.00000	.14510	.04720	.00020	.00120	.00160
6.380	.00000	.33480	.05240	.00050	.00110	.00180
8.530	.00000	.51270	.06220	.00240	.00090	.00080
10.660	.00000	.66760	.08400	.00530	-.00030	.00060
12.790	.00000	.80510	.12570	.00550	-.00030	.00030
14.900	.00000	.93360	.18470	.00560	.00020	.00030
16.970	.00000	1.04480	.25760	.00490	.00020	.00010
18.960	.00000	1.11860	.32940	.00340	.00100	-.00290
20.920	.00000	1.11070	.38310	.00360	.00040	-.00050
22.940	.00000	1.14700	.44550	.00290	-.00040	.00130
24.970	.00000	1.17480	.50420	.00550	-.00100	.00150
GRADIENT	.00000	.08426	-.00536	.00009	.00005	.00003

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1145 )

PAGE 12

(RG0012) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XHRP = 1339.9100 IN. XC  
YHRP = .0000 IN. YC  
ZHRP = 190.7500 IN. ZC

## PARAMETRIC DATA

BETA = .000 STAB = -1.900  
ELV-18 = -23.000 ELV-08 = -23.000  
RUD-U = .000 RUD-L = .000

RUN NO. 12/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.550	-4.440	.0000	-.57030	.09290	.73510	.00150	.00050	.00150
35.520	-2.260	.0000	-.38750	.06790	.69150	.00140	.00040	.00120
35.510	-.070	.0000	-.19050	.05290	.62800	.00360	-.00030	.00150
35.510	2.080	.0000	-.00730	.04670	.58730	.00190	.00040	.00150
35.510	4.230	.0000	.16170	.04770	.57950	.00260	.00000	.00110
35.510	6.380	.0000	.34720	.05240	.51100	.00280	.00010	.00100
35.520	10.660	.0000	.68010	.08440	.45730	.00530	-.00080	.00060
35.570	12.790	.0000	.80830	.12540	.46450	.00540	-.00070	.00060
35.650	14.900	.0000	.93870	.18480	.44310	.00630	-.00040	.00020
35.750	16.970	.0000	1.04610	.25790	.41560	.00480	-.00030	.00030
35.870	18.960	.0000	1.11850	.33150	.35210	.00430	-.00030	-.00170
35.970	20.920	.0000	1.11310	.38650	.29780	.00630	-.00050	.00070
36.070	22.940	.0000	1.15100	.44880	.16300	.00550	-.00080	.00070
36.180	24.970	.0000	1.17830	.50800	.02780	.00850	-.00150	.00110
	GRADIENT	.00000	.08507	-.00516	-.01918	.00013	-.00005	-.00002

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 13

CA11UVAL1146(EXT)KIH15.1V9.1

(RG0013) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = -1.920  
ELV-18 = 17.000 ELV-08 = 17.000  
RUD-U = .000 RUD-L = .000

RUN NO. 13/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.530	-4.440	.00000	-.133910	.07200	-.15410	.00340	-.00040	.00210
35.510	-2.260	.00000	-.14450	.05170	-.22050	.00550	-.00070	.00260
35.490	-.070	.00000	.04740	.04320	-.27540	.00820	-.00120	.00180
35.490	2.080	.00000	.23490	.04370	-.32640	.00800	-.00150	.00230
35.490	4.230	.00000	.40740	.05020	-.37650	.00860	-.00150	.00190
35.490	6.360	.00000	.58580	.06180	-.42840	.00950	-.00150	.00180
35.500	8.530	.00000	.76600	.07860	-.47390	.01000	-.00140	.00150
35.530	10.660	.00000	.91960	.10790	-.47970	.01080	-.00170	.00110
35.590	12.790	.00000	1.05450	.15890	-.47910	.01020	-.00190	.00000
35.680	14.900	.00000	1.17810	.22530	-.48710	.00910	-.00160	.00010
35.800	16.970	.00000	1.28700	.31010	-.49020	.00900	-.00120	-.00020
35.920	18.960	.00000	1.33900	.38360	-.50760	.00900	-.00060	-.00270
36.040	20.910	.00000	1.32930	.44750	-.55080	.00710	-.00120	.00070
36.150	22.940	.00000	1.36100	.51820	-.68270	.00840	-.00170	.00080
36.270	24.970	.00000	1.38920	.58670	-.80010	.01200	-.00250	.00150
GRADIENT		.00000	.08637	-.00239	-.02541	.00060	-.00014	-.00003

ORIGINAL PAGE IS  
OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 14

CA11UHAL1146(EXT)KIH15.6V9.1

(RG00:4) ( 14 NOV 75 )

REFERENCE DATA

SREF = 2500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

BETA = .000 STAB = -1.920  
ELV-B = 17.000 ELV-OB = 17.000  
RUD-U = .000 RUD-L = .000

RUN NO. 14/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.530	-4.440	.00000	-34160	.07310	-14510	.00340	.00030	.00210
35.510	-2.260	.00000	-14840	.05310	-22080	.00330	.00000	.00180
35.500	-.070	.00000	.04450	.04490	-28120	.00620	-.00060	.00200
35.500	2.080	.00000	.23360	.04500	-33960	.00740	-.00060	.00170
35.500	4.230	.00000	.41350	.05190	-39930	.00720	-.00080	.00190
35.500	6.380	.00000	.59220	.06320	-44110	.00940	-.00150	.00170
35.500	8.530	.00000	.76880	.08000	-48060	.00810	-.00080	.00180
35.530	10.660	.00000	.91850	.10930	-49160	.00880	-.00100	.00090
35.590	12.790	.00000	1.05860	.15970	-49210	.00930	-.00170	.00030
35.680	14.900	.00000	1.18590	.22890	-50200	.00920	-.00090	.00020
35.800	16.970	.00000	1.28740	.30870	-49100	.00770	-.00070	.00000
35.920	18.960	.00000	1.33000	.38400	-49590	.00760	-.00010	-.00140
36.030	20.910	.00000	1.32460	.44640	-53980	.00850	.00000	-.00070
36.150	22.940	.00000	1.35740	.51540	-64490	.00710	-.00140	.00140
36.260	24.970	.00000	1.37730	.58000	-75410	.00850	-.00190	.00160
	GRADIENT	.00000	.08719	-.00234	-.02893	.00054	-.00013	-.00002

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 15

(R00015) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = -1.900  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000

RUN NO. 15/ 0 FN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.530	-4.440	.00000	-45130	.07350	.25230	.00310	-.00020	.00230
35.500	-2.250	.00000	-24840	.04370	.18610	.00250	-.00010	.00190
35.490	-.070	.00000	-.06300	.03900	.12910	.00490	-.00060	.00190
35.490	2.080	.00000	.12320	.03610	.08240	.00490	-.00040	.00170
35.490	4.230	.00000	.23330	.03970	.04310	.00650	-.00120	.00190
35.490	6.380	.00000	.48190	.04810	-.00380	.00840	-.00090	.00150
35.490	8.530	.00000	.68250	.06240	-.04940	.00810	-.00140	.00100
35.510	10.660	.00000	.80600	.08770	-.06810	.00790	-.00110	.00120
35.570	12.790	.00000	.95980	.13730	-.08480	.00950	-.00180	.00020
35.660	14.900	.00000	1.08630	.20170	-.10580	.00930	-.00150	.00030
35.770	16.970	.00000	1.18780	.28070	-.12510	.00720	-.00110	-.00010
35.890	18.960	.00000	1.24930	.35470	-.16320	.00810	-.00100	-.00240
36.000	20.910	.00000	1.24490	.41540	-.21030	.00640	-.00120	-.00040
36.110	22.940	.00000	1.28190	.48430	-.34080	.00770	-.00150	.00090
36.220	24.970	.00000	1.31750	.55050	-.48480	.01000	-.00250	.00140
	GRADIENT	.00000	.08584	-.00375	-.02409	.00042	-.00011	-.00005

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 16

CALL UHAL1146(EXT)K1H15.1

(RG0016) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 2.080 STAB = -1.870  
ELV-1B = .000 ELV-OR = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
35.570	-20.000	2.08000	.20220	.02350	-.04230	.19480	.02590	.03210
35.530	-16.000	2.08000	.17420	.02630	-.00920	.15410	.01920	.02820
35.520	-14.000	2.08000	.16260	.02820	-.03480	.13400	.01650	.02490
35.510	-12.000	2.08000	.15100	.03000	-.05300	.11450	.01420	.02270
35.500	-10.000	2.08000	.13750	.03100	-.07520	.09290	.01200	.01940
35.490	-8.000	2.08000	.12680	.03270	-.09070	.07440	.00990	.01540
35.480	-6.000	2.08000	.12190	.03390	-.09910	.05510	.00760	.01280
35.480	-4.000	2.08000	.11700	.03450	-.10570	.03830	.00540	.00890
35.480	-3.000	2.08000	.11440	.03460	-.10850	.02920	.00440	.00690
35.480	-2.000	2.08000	.11530	.03510	-.11010	.01990	.00330	.00530
35.480	-1.000	2.08000	.11270	.03530	-.10940	.01190	.00220	.00330
35.480	.000	2.08000	.11370	.03530	-.11030	.00280	.00120	.00150
35.480	1.000	2.08000	.11550	.03520	-.10900	-.00750	-.00020	-.00040
35.480	2.100	2.08000	.11160	.03520	-.10780	-.01710	-.00110	-.00210
35.480	3.000	2.08000	.11710	.03530	-.10520	-.02560	-.00220	-.00450
35.480	4.000	2.08000	.11350	.03490	-.10590	-.03320	-.00310	-.00520
35.490	6.000	2.08000	.12340	.03390	-.10010	-.05280	-.00590	-.00950
35.490	8.000	2.08000	.13320	.03290	-.08670	-.07170	-.00800	-.01330
35.500	10.000	2.08000	.13990	.03110	-.07140	-.09050	-.01040	-.01730
35.510	12.000	2.08000	.14810	.02950	-.05380	-.10830	-.01250	-.01960
35.520	14.000	2.08000	.16210	.02760	-.03460	-.12930	-.01530	-.02240
35.530	16.000	2.08000	.17350	.02530	-.01220	-.14940	-.01800	-.02540
35.560	20.000	2.08000	.19960	.02210	-.03270	-.18480	-.02470	-.02960
GRADIENT	.00000	.00000	-.00018	.00006	-.00007	-.00903	-.00108	-.00181

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 17

CALL UMAL1146(EXT)KIH15.1

(R00017) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.870  
ELV-IB = .000 ELV-OB = .000

RUN NO.	17/ 0	RN/L = .00	GRADIENT INTERVAL = -5.00/ 5.00	CY	CLN	CSL
BETA	ALPHA	CL	CD	CLM		
-20.000	6.38000	.53140	.04150	-.17830	.19430	.04720
-15.000	6.38000	.50610	.04090	-.09520	.14790	.04040
-14.000	6.38000	.50170	.04230	-.06650	.12820	.03630
-12.000	6.38000	.49300	.04320	-.04370	.10850	.03230
-10.000	6.38000	.48630	.04420	-.02400	.08820	.02740
-8.000	6.38000	.48310	.04520	-.00520	.06940	.02260
-6.000	6.38000	.47470	.04540	.01180	.05150	.01760
-4.000	6.38000	.46820	.04590	.01990	.03620	.01210
-3.000	6.38000	.46820	.04640	.02230	.02830	.00950
-2.000	6.38000	.46500	.04600	.02570	.01930	.00700
-1.000	6.38000	.46560	.04650	.02750	.01200	.00400
1.000	6.38000	.46720	.04660	.02750	.00270	.00200
2.000	6.38000	.46870	.04680	.02620	-.00510	-.00110
3.000	6.38000	.46870	.04640	.02630	-.01350	-.00440
4.000	6.38000	.46700	.04620	.02090	-.02140	-.00680
6.000	6.38000	.47110	.04570	.00710	-.02880	-.00940
8.000	6.38000	.48000	.04520	-.00730	-.04710	-.01460
10.000	6.38000	.48750	.04480	-.02190	-.06420	-.02050
12.000	6.38000	.49540	.04360	-.04200	-.08360	-.02480
14.000	6.38000	.50000	.04180	-.06350	-.10210	-.02990
16.000	6.38000	.50970	.04000	-.09090	-.12220	-.03400
20.000	6.38000	.52330	.03820	-.16160	-.14150	-.03810
GRADIENT	.00000	-.00011	.00005	.00006	-.00820	-.04400
					-.00137	-.00271

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 18

CALLUHAL1146(EXT)KIH15.1

(R00018) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHAW = 12.790 STAB = -1.870  
ELV-18 = .000 ELV-08 = .000

RUN NO.		18/ 0	RN/L =	.00	GRADIENT INTERVAL =		-5.00/	5.00	
0	BETA	ALPHAW	CL	CD	CLM	CY	CLN	CSL	
35.680	-20.000	12.78000	.92930	.13450	-.32570	.20660	.02710	.04880	
35.630	-16.000	12.79000	.93330	.13420	-.21420	.15640	.02040	.04220	
35.610	-14.000	12.79000	.92950	.13320	-.16500	.13260	.01780	.03710	
35.600	-12.000	12.79000	.92790	.13200	-.12420	.11190	.01540	.03250	
35.590	-10.000	12.79000	.93090	.13170	-.09620	.09230	.01290	.02680	
35.580	-8.000	12.79000	.92980	.13100	-.08280	.07350	.01030	.02180	
35.570	-6.000	12.79000	.93340	.13050	-.07660	.05400	.00810	.01670	
35.570	-4.000	12.79000	.93980	.13170	-.06880	.03770	.00580	.01160	
35.560	-3.000	12.78000	.94080	.13200	-.06360	.02920	.00430	.00900	
35.560	-2.000	12.79000	.93540	.13150	-.05580	.02270	.00330	.00610	
35.560	-1.000	12.79000	.94340	.13160	-.05160	.01330	.00200	.00330	
35.560	.000	12.79000	.93630	.13110	-.05120	.00520	.00020	.00040	
35.560	1.000	12.79000	.94300	.13160	-.05350	-.00080	-.00140	-.00200	
35.560	2.000	12.79000	.94140	.13120	-.05440	-.00890	-.00280	-.00510	
35.560	3.000	12.79000	.94360	.13130	-.06170	.01670	.00460	.00820	
35.560	4.000	12.79000	.94070	.13070	-.06760	.02460	.00570	.01120	
35.570	6.000	12.79000	.93930	.13040	-.07850	.04130	.00870	.01650	
35.570	8.000	12.79000	.93780	.12950	-.08660	.06020	.01100	.02230	
35.570	10.000	12.79000	.93790	.12970	-.09350	.07820	.01370	.02700	
35.590	12.000	12.79000	.93350	.12840	-.12480	.09650	.01620	.03290	
35.600	14.000	12.79000	.94150	.12890	-.16140	.11650	.01870	.03850	
35.610	16.000	12.79000	.94460	.12910	-.20850	.13920	.02100	.04300	
35.660	20.000	12.79000	.94600	.13150	-.31470	.16850	.02530	.04860	
GRADIENT		.00000	.00039	-.00011	.00019	-.00774	-.0147	-.00284	

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHALL146 )

PAGE 19

CALL UHALL146 (EXT) KIM15.1

AT38AT37 T28

( 14 NOV 75 )

REFERENCE DATA

SREF = 9500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.900  
 ELV-18 = .000 ELV-08 = .000  
 ITANK = .000 RTANK = 180.000

RUN NO. 19/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.100	-20.000	6.37000	.58860	.09870	-.25160	.36900	.05620	.05860
36.010	-16.000	6.37000	.54860	.09750	-.19940	.27190	.04780	.04690
35.980	-14.000	6.36000	.52920	.09740	-.18360	.22800	.04310	.04120
35.950	-12.000	6.38000	.51220	.09660	-.12530	.18810	.03870	.03570
35.930	-10.000	6.38000	.49490	.09530	-.09640	.14710	.03360	.02980
35.910	-8.000	6.38000	.48000	.09370	-.08970	.11340	.02860	.02380
35.900	-6.000	6.39000	.47200	.09290	-.08310	.08290	.02310	.01880
35.890	-4.000	6.38000	.46940	.09230	-.07250	.05410	.01620	.01290
35.890	-3.000	6.38000	.46940	.09220	-.07340	.04270	.01320	.01000
35.890	-2.000	6.39000	.46690	.09190	-.06450	.02920	.00970	.00740
35.890	-1.000	6.38000	.47160	.09280	-.03440	.01660	.00510	.00350
35.890	.000	6.38000	.46870	.09250	-.03460	.00680	.00180	.00190
35.890	1.000	6.38000	.46580	.09200	-.03550	-.00450	-.00230	-.00120
35.890	3.000	6.38000	.46700	.09270	-.04070	-.02990	-.01020	-.00650
35.890	4.000	6.38000	.46800	.09240	-.04450	-.04070	-.01320	-.00900
35.900	6.000	6.38000	.47570	.09360	-.05580	-.07170	-.02040	-.01580
35.910	8.000	6.39000	.47770	.09420	-.07120	-.10090	-.02620	-.01980
35.930	10.000	6.39000	.48890	.09520	-.09610	-.13540	-.03220	-.02660
35.950	12.000	6.39000	.50910	.09610	-.12300	-.17470	-.03710	-.03270
35.970	14.000	6.39000	.52320	.09590	-.15480	-.21510	-.04110	-.03790
36.000	16.000	6.37000	.53600	.09520	-.18970	-.25700	-.04500	-.04340
36.080	20.000	6.37000	.57160	.09350	-.25170	-.34860	-.05290	-.05390
	GRADIENT	-.00000	-.00048	.00004	-.00057	-.01185	-.00376	-.00274

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DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 20

CALL UNAL1146(EXT)K1H15.1V9.1 AT38AT37 T28

(RG0020) ( 14 NOV 75 )

REFERENCE DATA

SREF = 7500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XPMP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 8.380 STAB = -1.900  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = 180.000

RUN NO. 20/ 0 RN/L = .00 GRADIENT INTERVAL = .5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.160	-20.000	6.37000	.60040	.09160	-.28290	.48810	-.00090	.06700
36.050	-16.000	6.37000	.56020	.09220	-.22240	.36780	.00320	.05310
36.030	-14.000	6.37000	.53570	.09130	-.17950	.31180	.00360	.04670
35.970	-12.000	6.38000	.51660	.09200	-.13840	.26010	.00460	.03970
35.940	-10.000	6.38000	.50250	.09200	-.10750	.20630	.00680	.03300
35.920	-8.000	6.38000	.48890	.09240	-.08270	.16000	.00800	.02620
35.90	-6.000	6.38000	.47990	.09250	-.06250	.11090	.00930	.01950
35.830	-4.000	6.38000	.47750	.09270	-.05230	.07210	.00960	.01370
35.890	-3.000	6.38000	.47430	.09270	-.04980	.05150	.00860	.01070
35.890	-2.000	6.38000	.47700	.09310	-.05020	.03370	.00720	.00700
35.890	-1.000	6.38000	.47410	.09320	-.05110	.02070	.00560	.00460
35.890	.000	6.38000	.47470	.09310	-.05380	.00840	.00210	.00160
35.890	1.000	6.38000	.47820	.09350	-.05560	-.00600	-.00250	-.00200
35.890	2.000	6.38000	.47490	.09340	-.05400	-.01860	-.00430	-.00360
35.890	3.000	6.38000	.47900	.09410	-.05550	-.03630	-.00610	-.00750
35.890	4.000	6.38000	.47850	.09320	-.06020	-.05880	-.00690	-.01110
35.900	6.000	6.38000	.47950	.09300	-.07110	-.09950	-.00720	-.01650
35.920	8.000	6.38000	.48680	.09270	-.08710	-.14470	-.00640	-.02320
35.940	10.000	6.38000	.50020	.09210	-.11360	-.19480	-.00530	-.02990
35.960	12.000	6.38000	.51430	.09070	-.14300	-.24460	-.00370	-.03740
36.000	14.000	6.37000	.52950	.08990	-.17260	-.29840	-.00210	-.04400
36.030	16.000	6.37000	.54660	.08890	-.21070	-.35060	-.00110	-.04990
36.140	20.000	6.37000	.58190	.08710	-.28390	-.46420	-.00140	-.06270
	GRADIENT	.00000	.00030	.00012	-.00101	-.01530	-.00235	-.00303

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UAL1146 )

PAGE 21

(RG0021) ( 14 NOV 75 )

CALLUAL1146(EXT)KIN15.8V9.1 AT38AT37 T28

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.880  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = 180.000

RUN NO. 21/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
35.170	-20.000	6.37000	.56550	.09100	-.24120	.51770	-.02400	.05650
35.060	-16.000	6.37000	.55600	.09130	-.20070	.40220	-.01990	.05380
35.010	-14.000	6.37000	.53250	.09040	-.16400	.34030	-.01630	.04700
35.980	-12.000	6.38000	.52050	.09140	-.13830	.28740	-.01210	.04100
35.950	-10.000	6.38000	.50210	.09220	-.11080	.22820	-.00740	.03330
35.920	-8.000	6.38000	.48900	.09280	-.08550	.17750	-.00400	.02720
35.910	-6.000	6.38000	.47840	.09290	-.06890	.12640	-.00200	.02010
35.890	-4.000	6.38000	.47760	.09360	-.05800	.08140	.00340	.01380
35.890	-3.000	6.38000	.47690	.09370	-.05370	.05640	.00480	.01040
35.890	-2.000	6.38000	.47860	.09400	-.05540	.03800	.00450	.00810
35.890	-1.000	6.38000	.47700	.09460	-.05610	.01950	.00420	.00440
35.890	.000	6.38000	.47560	.09480	-.05910	.00650	.00220	.00190
35.890	1.000	6.38000	.47590	.09460	-.05100	-.00860	.00020	-.00160
35.890	2.000	6.38000	.47640	.09470	-.05120	-.02780	-.00070	-.00510
35.890	3.000	6.38000	.48040	.09480	-.06010	-.04950	-.00030	-.00780
35.910	4.000	6.38000	.47750	.09420	-.06610	-.06360	.00010	-.01120
35.910	6.000	6.38000	.47900	.09380	-.07660	-.11850	.00340	-.01750
35.920	8.000	6.38000	.48680	.09310	-.09170	-.16670	.00690	-.02400
35.940	10.000	6.38000	.49650	.09220	-.11590	-.21670	.00970	-.03110
35.970	12.000	6.38000	.51230	.09050	-.13080	-.27590	.01430	-.03750
36.010	14.000	6.37000	.52590	.08900	-.15550	-.33380	.01940	-.04340
36.050	16.000	6.37000	.53630	.08940	-.18590	-.38770	.02330	-.04900
36.160	20.000	6.37000	.57380	.08740	-.24220	-.50270	.02500	-.06260
	GRADIENT	-.00000	.00008	.00012	-.00098	-.01764	-.00071	-.00310

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 22

CALL UNAL1146(EXT)KIH15.6V9.4 AT38AT37 T28

(R00022) ( 14 NOV 75 )

REFERENCE DATA

SREF = 9500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHAN = 6.780 STAB = -1.880  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = 180.000

RUN NO. 22/ 0 FM/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAN	CL	CD	CLM	CY	CLN	CSL
13.190	-20.000	6.37000	.56500	.09040	-.24660	.54050	-.03590	.07040
36.070	-16.000	6.37000	.55050	.09040	-.20220	.42650	-.03350	.05750
36.020	-14.000	6.37000	.53610	.09040	-.17120	.36430	-.02940	.05140
35.980	-12.000	6.38000	.51690	.09040	-.13990	.30390	-.02370	.04450
35.950	-10.000	6.38000	.50440	.09200	-.11600	.24370	-.01710	.03680
35.930	-6.000	6.38000	.46910	.09260	-.08700	.18890	-.01100	.02920
35.910	-6.000	6.38000	.46420	.09320	-.06990	.13770	-.00490	.02200
35.900	-4.000	6.38000	.47770	.09380	-.05890	.08780	.00020	.01410
35.890	-3.000	6.38000	.47940	.09360	-.05650	.06330	.00150	.01130
35.890	-2.000	6.38000	.47900	.09350	-.05720	.04180	.00270	.00760
35.890	-1.000	6.38000	.47510	.09480	-.05720	.02240	.00300	.00470
35.890	1.000	6.38000	.47660	.09470	-.05910	.00820	.00210	.00140
35.890	2.000	6.38000	.47510	.09450	-.06220	-.00950	.00010	-.00220
35.890	3.000	6.38000	.47910	.09490	-.06370	-.04950	.00240	-.00890
35.890	4.000	6.38000	.48060	.09430	-.06310	-.07310	.00330	-.01240
35.910	6.000	6.38000	.48150	.09330	-.07940	-.12320	.00750	-.01900
35.920	8.000	6.38000	.48820	.09260	-.09570	-.17870	.01370	-.02640
35.950	10.000	6.39000	.47940	.09160	-.11980	-.23290	.01890	-.03310
35.970	12.000	6.38000	.51030	.08910	-.13560	-.28480	.02430	-.04040
36.020	14.000	6.37000	.52790	.08810	-.15940	-.35130	.03130	-.04730
36.060	16.000	6.37000	.53820	.08770	-.19090	-.42640	.03530	-.05420
36.170	20.000	6.37000	.57340	.08630	-.25280	-.52850	.04010	-.06120
	GRADIENT	.00000	.00014	.00013	-.00130	-.01925	.00015	-.00332

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 23

CALL UNAL1146(EXT)K1415.6V9.4 AT38AT37 128

(RG0023) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500 0000 SO.FT.  
LREF = 327.7800 IN.  
SREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHAM = 5.380 STAB = -1.080  
ELV-IR = .000 ELV-OB = .000  
RUD-U = 25.000 RUD-L = 25.000  
ITANK = .000 RTANK = 180.000

RUN NO. 23/ 0 RN/L .00 ORADIENT INTERVAL = -5.00/ 5.00

Q	BC'A	ALPHAM	CL	CD	CLM	CY	CLM	CSL
35.250	-20.000	6.37000	.58390	.09830	-.22870	.61370	-.07480	.07600
35.120	-16.000	6.37000	.59400	.09710	-.18840	.49860	-.07090	.06260
35.070	-14.000	6.37000	.53650	.09650	-.15600	.43950	-.06670	.05550
35.020	-12.000	6.37000	.51600	.09700	-.12210	.37670	-.06100	.04920
35.980	-10.000	6.38000	.49610	.09770	-.09150	.31710	-.05600	.04200
35.960	-8.000	6.38000	.48520	.09690	-.06580	.26230	-.05060	.03540
35.930	-6.000	6.38000	.47840	.09920	-.04840	.20690	-.04350	.02770
35.910	-4.000	6.38000	.47700	.09950	-.04230	.19840	-.03800	.02070
35.910	-3.000	6.38000	.47620	.09910	-.04270	.12990	-.03340	.01660
35.900	-2.000	6.38000	.47670	.09890	-.04350	.10250	-.02960	.01260
35.900	-1.000	6.38000	.47900	.09880	-.04600	.07130	-.02400	.00890
35.900	.000	6.38000	.48300	.09870	-.05360	.04780	-.02030	.00450
35.900	1.000	6.38000	.48040	.09940	-.05660	.03090	-.02170	.00160
35.900	2.000	6.38000	.48160	.10000	-.05570	.01470	-.02390	-.00120
35.900	3.000	6.38000	.48050	.10040	-.05440	-.00320	-.02510	-.00450
35.900	4.000	6.38000	.48080	.10050	-.05670	-.01990	-.02200	-.00760
35.910	5.000	6.39000	.48020	.10150	-.06150	-.06120	-.02640	-.01390
35.920	6.000	6.38000	.48420	.10120	-.06900	-.11070	-.02360	-.02010
35.940	10.000	6.38000	.49800	.10020	-.08850	-.16300	-.01970	-.02760
35.970	12.000	6.38000	.50190	.09840	-.10420	-.21870	-.01370	-.03400
36.000	14.000	6.37000	.52020	.09700	-.13260	-.28070	-.00740	-.04160
36.040	16.000	6.37000	.53310	.09760	-.15090	-.35620	-.00410	-.04780
36.140	20.000	6.37000	.56540	.09490	-.20820	-.44810	-.00090	-.05950
GRADIENT		.00000	.00055	.00018	-.00213	-.02214	.00144	-.00353

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 24

CALLUWAL1146(EXT)K1H15.6V9.4 A776AT71 T28.1

(RG0024) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.880  
ELV-B = .000 ELV-OB = .000  
RUD-D = 25.000 RUD-L = 25.000  
ITANK = -5.000 ITANK = .000

RUN NO.	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.290	-20.000	6.37000	.45520	.11190	-.09240	.62480	-.06390	.06900
36.160	-16.000	6.37000	.47540	.11710	-.11090	.48490	-.06500	.05810
36.110	-14.000	6.37000	.48130	.11920	-.10290	.42970	-.06040	.05230
36.060	-12.000	6.37000	.47940	.12040	-.09210	.36410	-.05490	.04590
36.020	-10.000	6.37000	.47770	.12130	-.07830	.29950	-.04760	.03890
36.000	-8.000	6.37000	.47150	.12360	-.05850	.24410	-.04130	.03170
35.970	-6.000	6.38000	.46820	.12510	-.04910	.19060	-.03630	.02480
35.960	-4.000	6.38000	.46860	.12770	-.03990	.14410	-.03080	.01800
35.960	-3.000	6.38000	.47070	.12790	-.03720	.11170	-.02830	.01450
35.950	-2.000	6.38000	.47060	.12830	-.03840	.09430	-.02710	.01170
35.950	-1.000	6.38000	.46950	.12820	-.03840	.07430	-.02640	.00870
35.950	.000	6.38000	.46890	.12820	-.04090	.05600	-.02760	.00380
35.950	1.000	6.38000	.47090	.12870	-.04130	.03110	-.02480	.00270
35.950	2.000	6.38000	.46950	.12900	-.03900	.01080	-.02400	.00140
35.950	3.000	6.38000	.47290	.12930	-.04100	-.00940	-.02350	-.00430
35.950	4.000	6.38000	.47060	.12910	-.04480	-.02450	-.02350	-.00850
35.960	6.000	6.39000	.47160	.12710	-.05040	-.06960	-.02090	-.01260
35.970	8.000	6.38000	.47310	.12620	-.06160	-.12380	-.01700	-.02000
35.990	10.000	6.37000	.47100	.12480	-.07330	-.17870	-.01250	-.02640
36.020	12.000	6.37000	.47270	.12380	-.08600	-.23620	-.00830	-.03310
36.060	14.000	6.37000	.47340	.12200	-.09790	-.29890	-.00520	-.03940
36.100	16.000	6.37000	.46870	.11830	-.10710	-.36040	-.00270	-.04510
36.190	20.000	6.37000	.45280	.10880	-.10560	-.48120	-.00110	-.05570
	GRADIENT	.00020	.00023	.00019	-.00058	-.02163	.00086	-.00311

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 25

(R00025) ( 14 NOV 75 )

CA1'UHAL1146(EXT)KIH:5.6V9.4

AT70AT71 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.880  
ELV-18 = .000 ELV-08 = .000  
RUD-U = 25.000 RUD-L = 25.000  
ITANK = .000 RTANK = .000

RUN NO. 25/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.290	-20.000	6.37000	.43750	.11620	.00360	.61340	-.07090	.07600
36.170	-16.000	6.37000	.46610	.12160	-.02950	.48860	-.06900	.06430
36.110	-14.000	6.37000	.47610	.12320	-.03680	.42390	-.06430	.05680
36.060	-12.000	6.37000	.47220	.12310	-.03000	.35850	-.05690	.04950
36.030	-10.000	6.37000	.47110	.12440	-.02180	.29540	-.04840	.04030
36.000	-8.000	6.37000	.47130	.12710	-.00930	.24050	-.04180	.03360
35.980	-6.000	6.38000	.46350	.12890	.00430	.19000	-.03670	.02650
35.970	-4.000	6.38000	.46450	.13040	.00900	.14000	-.03000	.01850
35.960	-3.000	6.38000	.46320	.13050	.00890	.11780	-.02770	.01570
35.950	-2.000	6.38000	.46440	.13090	.01010	.09640	-.02750	.01220
35.950	-1.000	6.38000	.46590	.13060	.00810	.07900	-.02840	.00970
35.950	.000	6.38000	.46320	.13150	.01050	.06690	-.03130	.00620
35.950	1.000	6.38000	.46600	.13170	.00720	.04270	-.02920	.00300
35.950	2.000	6.38000	.46650	.13120	.00970	.01570	-.02550	-.00050
35.950	3.000	6.38000	.46760	.13110	.00860	-.00450	-.02380	-.00420
35.950	4.000	6.38000	.46810	.13150	.00250	-.02900	-.02220	-.00820
35.960	6.000	6.38000	.46940	.13170	-.00130	-.07100	-.02080	-.01400
35.970	8.000	6.38000	.47290	.12970	-.00780	-.11540	-.01770	-.02170
35.990	10.000	6.37000	.47590	.12760	-.02060	-.17390	-.01200	-.02890
36.020	12.000	6.37000	.46970	.12570	-.02820	-.22570	-.00760	-.03600
36.050	14.000	6.37000	.46800	.12360	-.03650	-.28280	-.00370	-.04260
36.090	16.000	6.37000	.46710	.12140	-.03490	-.33980	-.00160	-.04880
36.150	20.000	6.37000	.43490	.11200	-.03050	-.45660	.00250	-.06010
	GRADIENT	.00000	.00053	.00013	-.00048	-.02068	.00077	-.00331

ORIGINAL PAGE IS  
OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL114E )

PAGE 26

CALLUVAL1146(EXT)K1H15.6V9.4 AT70AT71 T28.1

(RG0026) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.880  
ELV-1B = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RLN NO. 26/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.240	-20.000	6.37000	.44570	.10860	-.03190	.55403	-.04080	.07190
36.120	-16.000	6.37000	.47320	.11630	-.04580	.42473	-.03600	.05860
36.070	-14.000	6.37000	.48010	.11800	-.05430	.35403	-.02980	.05140
36.030	-12.000	6.37000	.48310	.12000	-.05050	.29370	-.02290	.04420
36.000	-10.000	6.37000	.47910	.12090	-.04150	.23070	-.01530	.03630
35.980	-8.000	6.38000	.47620	.12370	-.02820	.18230	-.01050	.02920
35.960	-6.000	6.38000	.47500	.12550	-.01210	.13130	-.00560	.02160
35.950	-4.000	6.38000	.47290	.12700	-.00310	.08370	-.00080	.01500
35.950	-3.000	6.38000	.46870	.12630	.00080	.06320	.00030	.01160
35.950	-2.000	6.38000	.46860	.12640	.00020	.04200	.00070	.00810
35.940	-1.000	6.38000	.47270	.12550	-.00080	.02530	.00020	.00500
35.940	.000	6.38000	.47320	.12590	-.00220	.00630	.00130	.00140
35.940	1.000	6.38000	.47180	.12560	-.00550	-.02000	.00330	.00280
35.940	2.000	6.38000	.47010	.12610	-.00160	-.03870	.00320	.00590
35.950	3.000	6.38000	.47160	.12640	-.00530	-.05850	.00360	.00900
35.950	4.000	6.38000	.47360	.12700	-.00990	-.07670	.00400	.01240
35.960	6.000	6.38000	.47300	.12560	-.01860	-.12460	.00850	.01910
35.980	8.000	6.38000	.47630	.12380	-.03100	-.17720	.01410	.02730
36.000	10.000	6.37000	.47710	.12080	-.04700	-.22910	.01950	.03430
36.030	12.000	6.37000	.47380	.11780	-.04730	-.28170	.02540	.04040
36.070	14.000	6.37000	.47510	.11620	-.05590	-.35040	.03250	.04840
36.110	16.000	6.37000	.46910	.11330	-.05590	-.41150	.03640	.05440
36.220	20.000	6.37000	.43460	.10460	-.04010	-.53120	.03370	.06550
GRADIENT	.00000	.00023	.00023	-.00000	-.00090	-.02022	.00062	-.00345

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 27

(RG0027) ( 14 NOV 75 )

CALL UHAL1146(EXT)KIHI5.6V9.4 A770AT7) T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC BETA = .000 STAB = -1.880  
LREF = 327.7800 IN. YMRP = .0000 IN. YC ELV-1B = .000 ELV-0B = .000  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC RUD-U = .000 RUD-L = .000  
SCALE = .0400 ITANK = .000 RTANK = .000

PARAMETRIC DATA

RUN NO. 27/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.980	-4.440	.00000	-43140	.14460	.21370	-.00130	.00170	.00060
35.950	-2.250	.00000	-24650	.12250	.16350	-.00280	.00220	.00100
35.940	-.070	.00000	-.05760	.11260	.11500	-.00030	.00180	.00100
35.940	2.080	.00000	.11970	.11120	.07940	-.00090	.00200	.00070
35.940	4.230	.00000	.29390	.11620	.03870	-.00050	.00220	.00150
35.940	6.380	.00000	.47190	.12530	-.00430	.00110	.00200	.00130
35.950	8.520	.00000	.64070	.14080	-.04440	.00420	.00110	.00150
35.970	10.650	.00000	.79470	.16660	-.06780	.00890	.00110	.00140
36.030	12.780	.00000	.94380	.21280	-.08530	.01110	.00030	.00150
36.120	14.890	.00000	1.06780	.27520	-.10680	.01090	.00040	.00110
36.230	16.960	.00000	1.18010	.35290	-.11330	.01420	.00050	.00200
36.340	18.950	.00000	1.24350	.42500	-.12260	.01350	.00050	.00250
36.470	20.910	.00000	1.26660	.49440	-.14620	.01500	.00010	.00050
36.580	22.940	.00000	1.29130	.55810	-.22270	.01370	.00070	.00240
24.960	24.960	.00000	1.32360	.62680	-.33840	.01440	.00060	.00330
GRADIENT		.00000	.08384	-.00315	-.02004	.00616	.00004	.00007

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 28

CALLUHAL1146(EXT)KIH15.6V9.4 A76AT71 T28.1

(RG0028) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = -1.880  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = -5.000 RTANK = .000

RUN NO. 28/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.980	-4.440	.00000	-4.2990	.14320	.18860	-.00340	.00190	.00070
35.950	-2.250	.00000	-2.4340	.12100	.13880	-.00450	.00200	.00120
35.940	-.070	.00000	-.05140	.11170	.08260	-.00150	.00170	.00070
35.940	2.080	.00000	.12530	.11060	.04170	-.00170	.00200	.00100
35.940	4.230	.00000	.29350	.11450	-.00200	-.00110	.00200	.00080
35.940	6.380	.00000	.47530	.12370	-.05090	-.00180	.00230	.00080
35.940	8.520	.00000	.64570	.13790	-.09340	.00170	.00140	.00060
35.970	10.650	.00000	.79910	.16420	-.12070	.00320	.00110	.00040
36.020	12.780	.00000	.93650	.20840	-.13680	.00470	.00100	.00040
36.110	14.990	.00000	1.05770	.27100	-.15520	.00810	.00060	.00080
36.220	16.960	.00000	1.16500	.34860	-.16200	.00760	.00110	.00100
36.340	18.950	.00000	1.24400	.42070	-.18080	.01200	.00070	.00020
36.450	20.910	.00000	1.28620	.48370	-.20420	.01160	.00020	.00110
36.570	22.940	.00000	1.26130	.54870	-.29440	.01340	-.00030	.00160
36.680	24.960	.00000	1.29230	.61570	-.40500	.01670	-.00090	.00260
	GRADIENT	.00000	.08379	-.00314	-.02208	.00034	.00001	.00000

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 29

CALLUVAL1145(EXT)KIH15.6V9.4 AT76AT71 T28.1

(RG0029) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 8.380 STAB = -1.880  
ELV-IB = .000 ELV-OB = .000  
RLO-U = .000 RUC-L = .000  
ITANK = -5.000 RTANK = .000

RUN NO. 29/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

O	BETA	ALPHA	CL	CO	CLM	CY	CLN	CSL
36.230	-20.000	6.37000	.46430	.10330	-.12670	.56410	-.03420	.06560
36.120	-15.000	6.37000	.48010	.11100	-.12620	.43220	-.03220	.05360
36.070	-14.000	6.37000	.48500	.11370	-.11790	.36550	-.07730	.04750
36.030	-12.000	6.37000	.48810	.11620	-.11010	.30030	-.02150	.04150
35.990	-10.000	6.37000	.48040	.11660	-.09600	.23860	-.01500	.03400
35.970	-8.000	6.38000	.47900	.11920	-.07980	.18450	-.00950	.02680
35.960	-6.000	6.38000	.47660	.12120	-.06450	.13470	-.00570	.02020
35.950	-4.000	6.38000	.47410	.12320	-.05160	.08570	-.00160	.01350
35.940	-3.000	6.38000	.46990	.12370	-.04770	.08250	.00000	.01080
35.940	-2.000	6.38000	.47050	.12380	-.04590	.04120	.00020	.00710
35.940	-1.000	6.38000	.46940	.12360	-.04920	.02020	.00060	.00470
35.940	.000	6.38000	.46930	.12400	-.05110	.00920	.00180	.00100
35.940	1.000	6.38000	.46980	.12370	-.05110	.02140	.00320	-.00220
35.940	2.000	6.38000	.47130	.12410	-.05210	-.03680	.00360	-.00560
35.940	3.000	6.38000	.47020	.12370	-.05040	-.06060	.00390	-.00820
35.950	4.000	6.38000	.47160	.12330	-.05290	-.08200	.00520	-.01150
35.960	6.000	6.38000	.47660	.12160	-.05000	-.13370	.00990	-.01430
35.970	8.000	6.38000	.47490	.11970	-.04330	-.18420	.01430	-.02580
36.000	10.000	6.37000	.47700	.11790	-.09650	-.23860	.02000	-.03210
36.030	12.000	6.37000	.47640	.11660	-.10360	-.30370	.02690	-.03490
36.070	14.000	6.37000	.47670	.11330	-.11370	-.36960	.03190	-.04550
36.120	16.000	6.37000	.46940	.11080	-.12060	-.43410	.03560	-.05130
36.230	20.000	6.37000	.44900	.10200	-.11370	-.55920	.03550	-.06180
	GRADIENT	.00000	-.00012	.00002	-.00036	-.02073	.00080	-.00315

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OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 30

(R00030) ( 14 NOV 75 )

CALLUHAL1146(EXT1K1H15.7V9.4 AT70AT71 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.880  
ELV-1B = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO.	30/ 0	RN/L = .00	GRADIENT INTERVAL = -5.00/ 5.00				
BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
-20.000	6.37000	.44700	.10750	-.03340	.56850	-.05070	.07320
-16.000	6.37000	.47520	.11440	-.03760	.43620	-.04520	.05970
-14.000	6.37000	.48210	.11700	-.06060	.37230	-.03790	.05290
-12.000	6.37000	.48260	.11820	-.05670	.30520	-.02950	.04500
-10.000	6.37000	.47890	.11990	-.04910	.24150	-.02160	.03740
-8.000	6.38000	.47400	.12220	-.03180	.18910	-.01530	.02980
-6.000	6.38000	.47100	.12460	-.01410	.13830	-.00890	.02300
-5.000	6.38000	.47090	.12570	-.00810	.1010	-.00550	.01860
-4.000	6.38000	.47110	.12610	-.00700	.08810	-.00300	.01640
-3.000	6.38000	.47070	.12630	-.00080	.06690	-.00150	.01200
-2.000	6.38000	.47220	.12550	-.00110	.04480	-.00060	.00830
-1.000	6.38000	.46860	.12510	-.00290	.02430	.00020	.00450
.000	6.38000	.47380	.12550	-.00730	.00330	.00170	.00140
1.000	6.38000	.46990	.12520	-.00480	-.02010	.00410	-.00280
2.000	6.38000	.47100	.12590	-.00260	-.03570	.00450	-.00580
3.000	6.38000	.47060	.12630	-.00490	-.06110	.00570	-.00800
4.000	6.38000	.47200	.12670	-.00910	-.09110	.00720	-.01250
6.000	6.38000	.47290	.12460	-.02090	-.12690	.01250	-.01980
8.000	6.38000	.47820	.12300	-.03380	-.18200	.01960	-.02740
10.000	6.37000	.47580	.12020	-.04790	-.23610	.02610	-.03410
12.000	6.37000	.47960	.11730	-.05490	-.29570	.03370	-.04190
14.000	6.37000	.47370	.11520	-.04920	-.35910	.04040	-.04930
16.000	6.37000	.46140	.11230	-.04930	-.42170	.04520	-.05520
20.000	6.37000	.43160	.10380	-.03880	-.54340	.05130	-.06650
GRADIENT	-.00000	.00004	.00005	-.00012	-.02135	.00134	-.00353

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 31

CALL UHAL1146(EXT)K1H15.11V9.4 AT70AT71 T28.1

(R00031) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHAH = 6.380 STAB = -1.880  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO.	31/ 0	RN/L =	.00	GRADIENT	INTERVAL =	-5.00/	5.00	
Q	BETA	ALPHAH	CL	CD	CLM	CY	CLN	CSL
36.270	-20.000	6.37000	.44590	.11020	-.02350	.59580	-.06720	.07380
36.140	-16.000	6.37000	.47230	.11520	-.04720	.45930	-.05970	.06050
35.090	-14.000	6.37000	.47630	.11720	-.04690	.39010	-.05170	.05380
36.040	-12.000	6.37000	.48270	.11900	-.05230	.32550	-.04240	.04630
36.010	-10.000	6.37000	.48100	.12000	-.05110	.26280	-.03320	.03860
35.380	-8.000	6.38000	.47820	.12280	-.03640	.20380	-.02450	.03090
35.970	-6.000	6.38000	.47580	.12520	-.01920	.14950	-.01630	.02340
35.950	-4.000	6.38000	.47370	.12580	-.01010	.09890	-.00890	.01620
35.950	-3.000	6.38000	.46980	.12650	-.00710	.07410	-.00580	.01220
35.950	-2.000	6.38000	.47060	.12630	-.00430	.05230	-.00420	.00900
35.940	-1.000	6.38000	.47550	.12640	-.00870	.02810	-.00180	.00560
35.940	.000	6.38000	.47480	.12630	-.01090	.00490	.00090	.00170
35.940	1.000	6.38000	.47490	.12620	-.01110	-.02070	.00450	-.00260
35.940	2.000	6.38000	.47230	.12600	-.00950	-.04130	.00570	-.00580
35.950	3.000	6.38000	.47400	.12690	-.01250	-.06450	.00820	-.00960
35.950	4.000	6.38000	.47000	.12620	-.01450	-.08700	.01040	-.01250
35.960	6.000	6.38000	.47560	.12520	-.02530	-.13730	.01780	-.02000
35.980	8.000	6.38000	.47390	.12240	-.04000	-.19470	.02700	-.02830
36.000	10.000	6.37000	.47590	.11940	-.05180	-.25270	.03540	-.03580
36.040	12.000	6.37000	.47530	.11750	-.05430	-.31520	.04500	-.04360
36.080	14.000	6.37000	.47160	.11500	-.04810	-.37780	.05230	-.05020
36.100	15.000	6.37000	.46780	.11340	-.04500	-.41080	.05370	-.05370
36.130	16.000	6.37000	.46860	.11200	-.04260	-.44360	.05860	-.05640
36.240	20.000	6.37000	.42880	.10360	-.02230	-.56720	.06570	-.06840
GRADIENT		.00000	.00001	-.00003	-.00078	-.02326	.00242	-.00363

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA11 ( UVAL1146 )

PAGE 32

CA11UVAL1146(EXT)K1H15.11V9.4 AT72AT73 T28.1

(RG0032) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.990  
ELV-1B = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO.	32/ 0	RN/L	.00	GRADIENT	INTERVAL	-5.00/	5.00	
0	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.290	-20.000	6.37000	.43330	.12310	-.00960	.60040	-.06480	.07390
36.160	-16.000	6.37000	.46390	.12910	-.04720	.46120	-.05660	.06350
36.120	-14.000	6.37000	.46410	.13300	-.03870	.39880	.04870	.05300
36.070	-12.000	6.37000	.46990	.13550	-.04540	.32600	-.03760	.04540
36.040	-10.000	6.37000	.46730	.13720	-.04030	.25940	-.02810	.03740
36.010	-8.000	6.37000	.47080	.13850	-.02480	.19930	-.02080	.02960
35.990	-6.000	6.37000	.46430	.13970	-.00810	.14820	-.01380	.02300
35.980	-4.000	6.38000	.46470	.14130	.00360	.09790	-.00660	.01570
35.980	-3.000	6.38000	.46740	.14260	.00950	.07530	-.00400	.01240
35.970	-2.000	6.38000	.46540	.14220	.01120	.04850	-.00120	.00830
35.970	-1.000	6.38000	.46840	.14160	.01030	.02660	.00020	.00460
35.970	.000	6.38000	.46800	.14160	.01280	.00670	.00130	.00070
35.970	1.000	6.38000	.46880	.14200	.01280	-.01740	.00320	-.00350
35.970	2.000	6.38000	.47210	.14240	.01280	-.03770	.00530	-.00690
35.980	3.000	6.38000	.47370	.14330	.00690	-.06410	.00830	-.01040
35.980	4.000	6.38000	.47460	.14320	.00220	-.08580	.01050	-.01370
36.000	6.000	6.37000	.47420	.14420	-.00470	-.13850	.01740	-.02150
36.020	8.000	6.37000	.47590	.14320	-.01470	-.19350	.02600	-.02900
36.040	10.000	6.37000	.47980	.14100	-.02540	-.25540	.03650	-.03770
36.080	12.000	6.37000	.47920	.13900	-.02840	-.31900	.04610	-.04530
36.110	14.000	6.37000	.47830	.13620	-.02530	-.37510	.05380	-.05220
36.170	16.000	6.37000	.47630	.13520	-.02600	-.44510	.06180	-.05850
36.270	20.000	6.37000	.45540	.12710	-.01950	-.55730	.06520	-.06920
GRADIENT	.00000	.00105	.00017	.00013	-.00013	-.02282	.00202	-.00374

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 33

CA11UHAL1146(EXT)K1H15.11V9.4 AT72.1AT73.1 T28.1

(R00033) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.880  
ELV-1B = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 33/ 0 RN/L = .00 GRADIENT INTERVAL = -5.03/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.270	-20.000	6.37000	.44680	.11400	-.01950	.59480	-.06740	.07440
36.150	-16.000	6.37000	.47280	.11990	-.04140	.46110	-.05950	.06150
36.100	-14.000	6.37000	.47780	.12240	-.03930	.39530	-.03170	.05450
36.050	-12.000	6.37000	.48110	.12410	-.04520	.32440	-.04190	.04650
36.020	-10.000	6.37000	.48000	.12470	-.04430	.26020	-.03250	.03620
35.990	-8.000	6.37000	.47750	.12720	-.03350	.20560	-.02480	.03130
35.970	-6.000	6.39000	.47320	.12960	-.01620	.15190	-.01650	.02320
35.970	-5.000	6.38000	.47440	.13010	-.01000	.12110	-.01200	.01960
35.960	-4.000	6.38000	.47050	.13120	-.00270	.09670	-.00800	.01580
35.960	-3.000	6.38000	.47070	.13070	.00000	.07090	-.00530	.01300
35.950	-2.000	6.38000	.47370	.13090	-.00070	.05160	-.00380	.00910
35.950	-1.000	6.38000	.47080	.13000	-.00270	.03440	-.00220	.00600
35.950	.000	6.38000	.47540	.13010	-.00740	.00620	-.00080	.00130
35.950	1.000	6.38000	.47550	.13010	-.00610	-.02330	.00460	-.00310
35.950	2.000	6.38000	.47540	.13090	-.00510	-.04330	.00610	-.00620
35.960	3.000	6.38000	.47520	.13100	-.00770	-.06280	.00760	-.00940
35.960	4.000	6.38000	.46970	.13000	-.01010	-.08310	.00950	-.01340
35.970	6.000	6.38000	.47460	.12900	-.03200	.13960	.01780	-.02080
35.990	8.000	6.37000	.47480	.12710	-.03360	.19700	.02670	-.02810
36.010	10.000	6.37000	.47490	.12420	-.05080	-.25340	.03500	-.03620
36.050	12.000	6.37000	.47560	.12250	-.04820	-.31810	.04510	-.04400
36.090	14.000	6.37000	.46800	.11940	-.04180	-.37990	.05230	-.05000
36.140	16.000	6.37000	.45670	.11660	-.03260	-.44380	.05810	-.05620
36.240	20.000	6.37000	.42660	.10660	-.01550	-.56610	.06540	-.06820
	GRADIENT	-.00000	.00015	-.00002	-.00050	-.02290	.00235	-.00370

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TABULATED SOURCE FORCE DATA - CA11 ( UVAL1146 )

PAGE 34

CA11UVAL1146(EXT)K1H15.GV9.4 AT70AT71 T28

(RG0034) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHAW = 6.380 STAB = -1.880  
ELV-1B = .000 ELV-08 = .000  
FLD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

Q	BETA	ALPHAW	CL	CD	CLM	CY	CLN	CSL
36.210	-20.000	6.37000	.47520	.09840	-.08120	.54280	-.03910	.07090
36.100	-16.000	6.37000	.49220	.10500	-.07900	.41830	-.03480	.05870
36.050	-14.000	6.37000	.49340	.10720	-.07880	.35630	-.02910	.05150
36.010	-12.000	6.37000	.49140	.10890	-.07320	.29410	-.02180	.04460
35.980	-10.000	6.38000	.48680	.11010	-.06650	.23080	-.01500	.03590
35.960	-8.000	6.38000	.48160	.11290	-.04900	.18000	-.01020	.02900
35.940	-6.000	6.38000	.48080	.11480	-.03340	.12910	-.00530	.02150
35.930	-4.000	6.38000	.47620	.11610	-.02450	.08490	-.00100	.01580
35.930	-3.000	6.38000	.47740	.11650	-.02050	.06690	-.00050	.01150
35.920	-2.000	6.38000	.47410	.11620	-.01970	.04440	.00700	.00830
35.920	-1.000	6.38000	.47650	.11540	-.02330	.02690	.00010	.00490
35.920	.000	6.38000	.47960	.11590	-.02550	.00190	.00190	.00110
35.930	1.000	6.38000	.47500	.11510	-.02580	-.02090	.00340	-.00260
35.930	2.000	6.38000	.47680	.11580	-.02430	-.03900	.00360	-.00580
35.930	3.000	6.39000	.47920	.11640	-.02600	-.05950	.00430	-.00880
35.930	4.000	6.38000	.47910	.11600	-.02790	-.07760	.00460	-.01270
35.940	6.000	6.38000	.48380	.11460	-.03870	-.12450	.00900	-.01920
35.960	8.000	6.38000	.48310	.11230	-.05110	-.17070	.01400	-.02590
35.980	10.000	6.39000	.48860	.10970	-.06910	-.22670	.01960	-.03350
36.010	12.000	6.37000	.49440	.10800	-.07690	-.28170	.02580	-.04060
36.050	14.000	6.37000	.48940	.10610	-.08160	-.34370	.03270	-.04830
36.090	16.000	6.37000	.48560	.10330	-.08110	-.40870	.03730	-.05410
36.190	20.000	6.37000	.46710	.09440	-.08410	-.52070	.04080	-.06520
GRADIENT	.00035	.00000	-.07003	-.00070	-.02074	.00079	.00351	

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TABULATED SOURCE FORCE DATA - CA11 ( UVAL1146 )

PAGE 35

(R00035) ( 14 NOV 75 )

JAL1UVAL1146(EXT)K1H15.6V9.1 AT70AT71 T28.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.3100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.880  
ELV-IB = .000 ELV-OB = .000  
RLO-U = .000 RLO-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 35/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.230	-20.000	6.37000	.45400	.10940	-.03670	.53770	-.03150	.06900
36.110	-16.000	6.37000	.47690	.11640	-.05160	.40420	-.02650	.05590
36.070	-14.000	6.37000	.48530	.11880	-.05530	.33800	-.02030	.04850
36.030	-12.000	6.37000	.49420	.11930	-.05050	.27490	-.01360	.04160
36.000	-10.000	6.37000	.48470	.12130	-.04170	.21730	-.00820	.03390
35.980	-8.000	6.38000	.47830	.12340	-.02560	.17010	-.00560	.02720
35.960	-6.000	6.38000	.47750	.12570	-.01050	.12240	-.00200	.02020
35.960	-5.000	6.38000	.47450	.12640	-.00690	.09850	.00000	.01680
35.950	-4.000	6.38000	.47570	.12700	-.00200	.07920	.00110	.01430
35.950	-3.000	6.38000	.47310	.12640	-.00050	.05800	.00170	.01090
35.940	-2.000	6.38000	.47650	.12610	.00140	.03590	.00140	.00770
35.940	-1.000	6.38000	.47520	.12560	.00060	.02470	.00080	.00450
35.940	.000	6.38000	.47450	.12560	-.00410	.00160	.00130	.00130
35.940	1.000	6.38000	.47370	.12550	-.00260	-.02000	.00230	-.00250
35.940	2.000	6.38000	.47800	.12650	.00320	-.03860	.00160	-.00590
35.950	3.000	6.38000	.47480	.12680	.00240	-.05430	.00120	-.00810
35.950	4.000	6.38000	.47590	.12690	.00520	-.07410	.00180	-.01140
35.960	6.000	6.38000	.47680	.12610	-.01480	-.11910	.03480	-.01790
35.980	8.000	6.38000	.47770	.12420	-.02840	-.16800	.00830	.02550
36.000	10.000	6.37000	.47790	.12130	-.04180	-.21550	.01190	-.03160
36.030	12.000	6.37000	.48240	.12060	-.04690	-.27570	.01760	-.03990
36.060	14.000	6.37000	.47840	.11760	-.05080	-.33370	.02310	-.04620
36.110	16.000	6.37000	.46560	.11500	-.04260	-.39250	.02690	-.05160
36.210	20.000	6.37000	.43170	.10560	-.02860	-.51380	.03060	-.06330
GRADIENT	-.00000	.00013	.00000	.00000	.00000	-.01923	.00012	-.00320

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TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 30

(R00036) ( 14 NOV 75 )

CALLUM L1146TEXTIKH15.1V9.1 AT70AT71 128.1

## REFERENCE DATA

SREF = 9500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

YMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.880  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 36/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
0	-20.000	6.37000	.45470	.10330	-.06890	.50290	-.01210	.06920
36.100	-16.000	6.37000	.48100	.11620	-.07670	.36880	-.00810	.05540
36.050	-14.000	6.37000	.48690	.11900	-.06730	.31050	-.00170	.04820
36.020	-12.000	6.37000	.48500	.12050	-.05460	.25000	.00270	.04110
35.990	-10.000	6.37000	.48170	.12160	-.03810	.19490	.00630	.03320
35.970	-8.000	6.38000	.47460	.12380	-.02340	.14870	.00660	.02630
35.960	-6.000	6.38000	.47260	.12440	-.00910	.10820	.00650	.01960
35.950	-4.000	6.38000	.46960	.12590	-.00030	.06770	.00640	.01340
35.950	-3.000	6.38000	.46990	.12520	.00270	.04970	.00570	.01070
35.940	-2.000	6.38000	.46830	.12430	.00380	.03330	.00400	.00790
35.940	-1.000	6.38000	.46890	.12390	.00120	.01930	.00170	.00440
35.940	.000	6.38000	.47320	.12420	.00060	.00210	.00070	.00060
35.940	1.000	6.38000	.46780	.12400	.00070	-.01380	.00010	-.00170
35.940	2.000	6.38000	.47020	.12440	.00160	-.03100	.00250	-.00530
35.940	3.000	6.38000	.46890	.12480	.00040	-.04560	.00450	-.00800
35.950	4.000	6.38000	.47220	.12580	.00220	-.06270	.00610	-.01140
35.950	6.000	6.38000	.47320	.12500	-.01270	-.10260	.00590	-.01770
35.970	8.000	6.38000	.47580	.12320	-.02490	-.14430	.00530	-.02400
35.990	10.000	6.38000	.47760	.12130	-.04000	-.19140	.00410	-.03100
36.010	12.000	6.38000	.47650	.11960	-.05180	-.24340	.00040	-.03820
36.050	14.000	6.37000	.47220	.11670	-.06680	-.30160	.00360	-.04590
36.090	16.000	6.37000	.47220	.11470	-.07060	-.36520	.00630	-.05270
36.190	20.000	6.37000	.43490	.10410	-.06280	-.48120	.01140	-.06390
GRADIENT		.00000	.00017	-.00002	-.00032	-.01618	-.00162	-.00313

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TABULATED SOURCE FORCE DATA - CAT1 ( UNALIGNED )

PAGE 37

CAT1:UNALIGNED:EXT:KIMIS.1 AT70AT71 Y29.1

(R00037) ( 14 NOV 75 )

REFERENCE DATA

SREF = 9500.0000 SQ.FT. XMRP = 1375.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = 0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0000

PARAMETRIC DATA

ALPHAM = 8.380 STAB = -1.980  
 ELV-ID = .000 ELV-OB = .000  
 ITANK = .000 RTANK = .000

RUN NO. 37/ 0 FR/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
35.140	-20.000	6.37000	.47240	.11840	-.10510	.37950	.04726	.06180
35.060	-16.000	6.37000	.48850	.12430	-.08800	.27100	.04036	.04070
35.030	-14.000	6.37000	.48410	.12530	-.06540	.22340	.03750	.04250
35.000	-12.000	6.37000	.47840	.12560	-.04740	.17870	.03430	.03600
34.980	-10.000	6.37000	.47720	.12560	-.03010	.13940	.03060	.03070
35.970	-8.000	6.37000	.47210	.12540	-.01150	.10440	.02560	.02500
35.950	-6.000	6.37000	.46800	.12560	.00500	.07480	.01950	.01880
35.950	-4.000	6.37000	.46350	.12510	.01680	.05240	.01400	.01300
35.940	-3.000	6.37000	.45940	.12470	.02140	.03910	.01040	.01050
35.940	-2.000	6.37000	.46540	.12460	.02370	.02850	.00730	.00790
35.940	-1.000	6.37000	.46030	.12330	.02050	.01400	.00400	.00430
35.940	0.000	6.37000	.46090	.12320	.02000	.00260	.00080	.00200
35.940	1.000	6.37000	.46440	.12360	.02160	-.00840	-.00280	-.00120
35.940	2.000	6.37000	.45180	.12370	.02230	-.02190	-.00650	-.00400
35.940	3.000	6.37000	.46520	.12470	.01970	-.03350	-.00980	-.00770
35.950	4.000	6.37000	.46680	.12520	.01440	-.04520	-.01330	-.01050
35.950	6.000	6.37000	.46820	.12590	.00430	-.07070	-.01980	-.01580
35.960	8.000	6.37000	.46960	.12570	-.00920	-.09860	-.02560	-.02200
35.960	10.000	6.37000	.47.90	.12580	-.04630	-.13340	-.03050	-.02770
36.000	12.000	6.37000	.47790	.11560	-.04110	-.17320	-.03480	-.03380
36.020	14.000	6.37000	.47690	.12400	-.06000	-.21520	-.03800	-.03950
36.050	16.000	6.37000	.47370	.12170	-.08100	-.25840	-.04170	-.04580
36.120	20.000	6.37000	.45180	.11460	-.09290	-.35170	-.04910	-.05550
	GRADIENT	00000	.00046	-.00002	-.00027	-.01212	-.00340	-.00256

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 38

CALL UHAL1146(EXT)KI V9.1 AT70AT71 T28.1 (RG0038) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 RUD-U = .000  
RUD-L = .000 ITANK = .000  
RTANK = .000

RUN NO. 38/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHAM	BETA	CL	CD	CLM	CY	CLN	CSL
35.980	-4.450	.00000	-.37500	.14160	-.01200	.00690	.00130	.00120
35.950	-2.270	.00000	-.20630	.12010	-.00150	.00210	.00120	.00190
35.940	-.090	.00000	-.03410	.11060	.01280	.00320	.00100	.00220
35.940	2.060	.00000	.12690	.10860	.03030	.00400	.00130	.00150
35.940	4.210	.00000	.28440	.11230	.05000	.00340	.00120	.00140
35.940	6.360	.00000	.44620	.12030	.07130	.00370	.00080	.00180
35.940	8.500	.00000	.59310	.13210	.09570	.00720	.00020	.00170
35.960	10.630	.00000	.72670	.15360	.13130	.00840	.00010	.00210
36.010	12.760	.00000	.85850	.19420	.16540	.01020	.00050	.00160
36.090	14.880	.00000	.97550	.25330	.18660	.01210	.00080	.00190
36.200	16.940	.00000	1.07410	.32480	.21840	.01320	.00080	.00240
36.310	18.950	.00000	1.14120	.39430	.24440	.01450	.00060	.00130
36.420	20.910	.00000	1.12990	.45150	.27280	.01580	.00060	.00160
36.520	22.950	.00000	1.14670	.51010	.28720	.01320	.00050	.00260
36.580	24.980	.07000	1.14950	.55860	.29240	.01280	.00020	.00330
36.610		.00000	.07631	-.00325	.00719	.00033	-.00000	.00000

GRADIENT

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 39

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

BETA = .000 STAB = -1.970  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

CALL UVAL1146(EXT)KIH15.6V9.1C2V11 AT86AT97 T28.1

(RG0039) ( 14 NOV 75 )

RUN NO. 39/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CO	CLM	CY	CLN	CSL
36.040	-4.440	.0000	-45370	.14320	.21590	-.00420	.C0290	.00050
36.010	-2.250	.0000	-26820	.12020	.18110	-.00510	.00320	.00090
36.000	-.070	.0000	-.07200	.11060	.14770	-.00130	.00260	.00150
36.000	2.080	.0000	.11410	.10860	.11150	-.00150	.00320	.00130
36.000	4.230	.0000	.29530	.11250	.06610	-.00070	.00290	.00130
36.000	6.370	.0000	.47300	.12150	.00800	.00020	.00250	.00140
36.000	8.520	.0000	.65390	.13760	-.04300	.00210	.00240	.00100
36.030	10.650	.0000	.81360	.16570	-.06720	.00580	.00150	.00180
36.090	12.780	.0000	.96560	.21300	-.08050	.00800	.00190	.00120
36.180	14.890	.0000	1.09630	.27810	-.09760	.00740	.00090	.00120
36.290	16.960	.0000	1.21130	.35760	-.09970	.00580	.00120	.00120
36.410	18.950	.0000	1.28870	.43280	-.12640	.01150	.00090	.00100
36.530	20.910	.0000	1.31760	.50270	-.14040	.01480	.00070	.00120
36.670	22.930	.0000	1.38350	.58740	-.19390	.01530	-.00030	.00270
36.810	24.960	.0000	1.43000	.66490	-.26430	.01380	-.00020	.00210
GRADIENT		.0000	.08686	-.00338	-.01703	.00049	-.00000	.00009

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TABULATED SOURCE FORCE DATA - CA11 ( UVAL1146 )

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CA11UVAL1146(EXTIKI15.6V9.1C2V11 AT86AT87 T28.1)

(RG0040) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.970  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.320	-20.000	6.37000	.45340	.10680	-.09750	.59510	-.04830	.06880
36.200	-16.000	6.37000	.48700	.11260	-.11400	.45690	-.04520	.05770
36.150	-14.000	6.37000	.49010	.11590	-.10010	.39190	-.04120	.05200
36.100	-12.000	6.37000	.49130	.11780	-.08170	.32650	-.03400	.04510
36.070	-10.000	6.37000	.48740	.11910	-.06170	.26130	-.02690	.03860
36.040	-8.000	6.37000	.48530	.12100	-.03890	.20640	-.02010	.03170
36.020	-6.000	6.37000	.48290	.12170	-.02360	.14880	-.01210	.02400
36.010	-4.000	6.37000	.48020	.12160	-.01310	.09780	-.00640	.01650
36.000	-3.000	6.37000	.48230	.12170	-.00770	.07770	-.00440	.01260
36.000	-2.000	6.37000	.48090	.12150	-.00190	.04970	-.00210	.00900
36.000	-1.000	6.37000	.47830	.12200	.00650	.02540	.00030	.00510
36.000	.000	6.37000	.48220	.12230	.00720	.00450	.00190	.00110
36.000	1.000	6.37000	.48180	.12190	.00740	-.02100	.00410	-.00330
36.000	2.000	6.37000	.48230	.12300	.00390	-.04480	.00640	-.00710
36.000	3.000	6.37000	.47860	.12140	-.00300	-.06710	.00870	-.01040
36.010	4.000	6.37000	.48130	.12160	-.01050	-.09180	.01110	-.01460
36.020	6.000	6.37000	.48210	.12100	-.02750	-.14380	.01600	-.02310
36.040	8.000	6.37000	.48480	.11950	-.04270	-.20160	.02300	-.03030
36.070	10.000	6.37000	.48860	.11910	-.06190	-.25980	.03200	-.03670
36.100	12.000	6.37000	.49020	.11730	-.07700	-.32350	.03900	-.04350
36.140	14.000	6.37000	.48540	.11500	-.09570	-.38830	.04700	-.04920
36.190	16.000	6.37000	.47970	.11180	-.11610	-.45510	.05140	-.05440
36.300	20.000	6.37000	.45590	.10180	-.10500	-.57280	.05150	-.06480
	GRADIENT	.00000	-.00000	.00001	.00062	-.02378	.00217	-.00390

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( URMAL1146 )

PAGE 41

(RG0041) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 9500.000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1335.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.970  
ELV-B = .000 ELV-OB = .000  
POD-U = .000 POD-L = .000  
TANK = .000 TANK = .000

Q	BETA	ALPHA	CL	CD	CLN	CY	CLN	CSL
36.310	-20.000	6.37000	.45520	.10860	-.09320	.58540	-.03830	.06810
36.190	-16.000	6.37000	.48570	.11570	-.11650	.45630	-.03840	.05790
36.140	-14.000	6.37000	.48910	.11790	-.10590	.38680	-.03460	.05180
36.100	-12.000	6.37000	.48970	.12040	-.08450	.32640	-.02960	.04540
36.070	-10.000	6.37000	.48800	.12150	-.06570	.26100	-.02270	.03840
36.040	-8.000	6.37000	.48660	.12310	-.04430	.20420	-.01560	.03190
36.020	-6.000	6.37000	.48450	.12270	-.02920	.14710	-.00910	.02410
36.010	-4.000	6.37000	.48190	.12230	-.02440	.12460	-.00680	.02120
36.000	-3.000	6.37000	.48180	.12240	-.01880	.10070	-.00500	.01630
35.990	-2.000	6.37000	.47970	.12210	-.01330	.07530	-.00310	.01290
35.990	-1.000	6.37000	.47960	.12210	-.00830	.05060	-.00160	.00910
35.990	1.000	6.37000	.48200	.12260	.00240	.02550	.00070	.00510
35.990	2.000	6.37000	.48150	.12270	.00040	.00590	.00210	.00100
36.000	3.000	6.37000	.47950	.12270	.00110	-.02070	.00380	-.00310
36.000	4.000	6.37000	.48090	.12190	-.00110	-.04450	.00590	-.00690
36.010	6.000	6.37000	.48260	.12230	-.00800	-.06640	.00760	-.01090
36.040	8.000	6.37000	.48250	.12180	-.01650	-.09330	.00930	-.01480
36.060	10.000	6.37000	.48490	.12140	-.02870	-.14340	.01330	-.02300
36.100	12.000	6.37000	.48400	.1210	-.04340	-.19760	.01930	-.03010
36.140	14.000	6.37000	.48710	.12160	-.0530	-.25970	.02740	-.03680
36.190	16.000	6.37000	.48750	.1160	-.08160	-.32020	.03370	-.04350
36.300	20.000	6.37000	.48240	.11370	-.09750	-.38340	.03900	-.04940
			.45140	.10480	-.11170	-.44550	.04210	-.05450
			-.00001	.09430	-.09430	-.56940	.04240	-.06430
			-.00010	.00001	.00141	-.02414	.00179	-.00396

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( JNAL1146 )

PAGE 42

CALL JNAL1146(EXT)KIH15.6VS.ICIV11 AT86AT87 T28.1

(RG0042) ( 14 NOV 75 )

REFERENCE DATA

SREF = 9500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0010 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

BETA = .000 STAB = -1.970  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 42/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHAM	BETA	CL	CD	CLM	CY	CLN	CSL
36.030	-4.440	.00000	-1.44690	.14220	.21110	-.00200	.00320	.00040
36.000	-2.250	.00000	-.26130	.11980	.17570	-.00110	.00270	.00140
35.990	-.070	.00000	-.07140	.11050	.14130	.00100	.00230	.00130
35.980	2.080	.00000	.11450	.10890	.10860	.00000	.00270	.00120
35.970	4.230	.00000	.29760	.11270	.06140	.00250	.00260	.00170
35.960	6.370	.00000	.47980	.12350	.00330	.00500	.00200	.00100
36.000	8.520	.00000	.65180	.13810	-.04850	.00500	.00210	.00160
36.030	10.650	.00000	.81370	.16060	-.07220	.00610	.00180	.00180
36.090	12.780	.00000	.96890	.21490	-.08680	.01040	.00210	.00180
36.170	14.890	.00000	1.09760	.27910	-.10400	.00810	.00090	.00160
36.290	16.960	.00000	1.20510	.35830	-.10850	.00890	.00110	.00160
36.410	18.950	.00000	1.28760	.43410	-.13120	.01270	.00010	.00160
36.530	20.910	.00000	1.32480	.50590	-.14750	.01500	.00040	.00070
36.670	22.930	.00000	1.38040	.58680	-.20260	.01970	.00070	.00210
36.870	24.960	.00000	1.43300	.66680	-.27090	.01490	.00040	.00170
GRADIENT		.00000	.08605	-.00324	-.01691	.00047	-.00006	.00011

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALI ( UMAL1146 )

PAGE 43

(RG0043) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.2000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.970  
ELV-18 = .000 ELV-08 = .000  
RUO-U = 25.000 RUO-L = 25.000  
ITANK = .000 RTANK = .000

RUN NO. 43/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
35.360	-20.000	6.37000	.45020	.11500	-.07740	.64640	-.05960	.07280
36.240	-16.000	6.37000	.48480	.12090	-.11260	.52940	-.07210	.06260
35.180	-14.000	6.37000	.49010	.12390	-.09890	.45820	-.06830	.05670
36.140	-12.000	6.37000	.48790	.12630	-.07270	.39630	-.06220	.05000
36.090	-10.000	6.37000	.47900	.12510	-.04790	.31680	-.05280	.04230
36.060	-8.000	6.37000	.47820	.12620	-.02190	.25740	-.04410	.03480
36.030	-6.000	6.37000	.47580	.12560	-.00930	.19550	-.03430	.02670
36.020	-4.000	6.37000	.47840	.12550	-.00570	.14430	-.02840	.01940
36.010	-3.000	6.37000	.47710	.12640	-.00030	.11940	-.02530	.01560
36.000	-2.000	6.37000	.47760	.12640	.00750	.09500	-.02410	.01190
36.000	-1.000	6.37000	.47560	.12700	.01140	.07250	-.02260	.00820
36.000	.000	6.37000	.50070	.12750	.01150	.04860	-.02060	.00420
36.000	1.000	6.37000	.47780	.12740	.01220	.02650	-.01940	.00020
36.000	2.000	6.37000	.47770	.12710	.03920	.00130	-.01800	-.00350
36.000	3.000	6.37000	.47790	.12720	.00500	-.02250	-.01590	-.00760
36.000	4.000	6.37000	.47890	.12590	-.00620	-.05090	-.01210	-.01220
36.020	6.000	6.37000	.48480	.12620	-.02320	-.10470	-.00690	-.02060
36.040	8.000	6.37000	.48620	.12790	-.03730	-.15870	-.00220	-.02790
36.060	10.000	6.37000	.48290	.12810	-.04700	-.21280	.00260	-.03450
36.090	12.000	6.37000	.48360	.12800	-.06290	-.26960	.00600	-.03970
36.130	14.000	6.37000	.47770	.12440	-.07260	-.32780	.00980	-.04520
36.170	16.000	6.37000	.47270	.12120	-.08830	-.38890	.01160	-.05030
36.280	20.000	6.37000	.44450	.11120	-.06940	-.51600	.01280	-.06090
	GRADIENT	.00030	.00011	.00003	.00030	-.02400	.00186	-.00391

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OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 44

CALL UHAL1146( EX' ) KIH15.6V9.1C1V12 AT86AT87 T28.1

( R00044 ) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

YPRP = 1339.9100 IN. XC  
YPRP = .0000 IN. YC  
ZPRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.970  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 44/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CO	CLM	CY	CLN	CSL
35.330	-20.000	6.37000	.45830	.10580	-.10040	.62040	-.05960	.07560
36.210	-16.000	6.37000	.45220	.11320	-.12960	.49230	-.05820	.06540
36.160	-14.000	6.37000	.49630	.11690	-.11670	.42830	-.05360	.05830
36.070	-12.000	6.37000	.48950	.11080	-.08480	.29070	-.03610	.04540
36.040	-10.000	6.37000	.48670	.11500	-.06290	.22820	-.02660	.03780
36.020	-8.000	6.37000	.48460	.12250	-.03280	.16210	-.01730	.02650
36.000	-4.000	6.37000	.48070	.12220	-.02480	.11130	-.01100	.01890
35.990	-3.000	6.37000	.47990	.12200	-.02070	.08320	-.00780	.01400
35.990	-2.000	6.37000	.47660	.12240	-.01400	.05820	-.00500	.00970
35.990	-1.000	6.37000	.47930	.12250	-.00440	.02810	-.00110	.00550
35.990	.000	6.37000	.47570	.12220	-.00350	.00560	.00130	.00150
35.990	2.000	6.37000	.47970	.12230	-.00740	-.05060	.00800	-.00780
36.000	3.000	6.37000	.47960	.12180	-.01340	-.07080	.01020	-.01110
36.000	4.000	6.37000	.47970	.12130	-.02430	-.10270	.01390	-.01630
36.020	6.000	6.37000	.48330	.12080	-.03780	-.15850	.02090	-.02420
36.040	8.000	6.37000	.47970	.11950	-.05580	-.21240	.02820	-.03200
36.070	10.000	5.37000	.48590	.11960	-.07670	-.26230	.03910	-.04020
36.110	12.000	6.37000	.48750	.11780	-.09520	-.34700	.04760	-.04770
36.150	14.000	6.37000	.48650	.11450	-.10900	-.41490	.05550	-.05490
36.200	16.000	6.37000	.47600	.11180	-.12660	-.48240	.06070	-.06010
36.310	20.000	6.37000	.45060	.10080	-.10930	-.60350	.06330	-.07160
GRADIENT		.00000	.00002	-.00008	.00047	-.02643	.00309	-.00433

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 45

CALL UHAL1146(EXT)K1H15.6V9.1C1 A786AT87 T28.1

(RG3045) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.970  
ELV-TB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.280	-20.000	6.37000	.45060	.10550	-.09350	.53243	-.01210	.05910
36.160	-16.000	6.37000	.47980	.11290	-.10730	.40590	-.01220	.04900
36.120	-14.000	6.37000	.48450	.11550	-.09430	.34480	-.01160	.04350
36.080	-12.000	6.37000	.48280	.11710	-.07610	.28670	-.00850	.03840
36.050	-10.000	6.37000	.48270	.11900	-.05670	.22440	-.00390	.03270
36.030	-8.000	6.37000	.48070	.12040	-.03560	.17030	.00070	.02680
36.010	-6.000	6.37000	.47740	.12070	-.01510	.11990	.00380	.01980
36.000	-4.000	6.37000	.47540	.12050	-.00310	.06240	.00420	.01400
35.990	-3.000	6.37000	.47220	.11940	-.00510	.06140	.00380	.01110
35.980	-2.000	6.37000	.47430	.12040	.00270	.04020	.00300	.00700
35.970	-1.000	6.37000	.47450	.12020	.01090	.02160	.00370	.00370
35.960	.000	6.37000	.47600	.12050	.00930	.00140	.00280	.00110
35.950	1.000	6.37000	.47620	.12080	.00850	-.01950	.00220	-.00270
35.940	2.000	6.37000	.47580	.12080	.00910	-.03900	.00210	-.00650
35.930	3.000	6.37000	.47600	.12010	.00040	-.05740	.00170	-.00890
36.000	4.000	6.37000	.47590	.11990	-.00860	-.07740	.00130	-.01280
36.010	6.000	6.37000	.47560	.11990	-.02010	-.11930	.00130	-.01910
36.030	8.000	6.37000	.47920	.11930	-.03380	-.16950	.00470	-.02470
36.050	10.000	6.37000	.47310	.11870	-.05690	-.22360	.00930	-.03150
36.080	12.000	6.37000	.48420	.11750	-.07330	-.28240	.01380	-.03750
36.120	14.000	6.37000	.47850	.11510	-.08960	-.34230	.01740	-.04200
36.160	16.000	6.37000	.47580	.11200	-.10910	-.39680	.01690	-.04620
36.200	20.000	6.37000	.45050	.10150	-.10160	-.51150	.01420	-.05510
GRADIENT	.00000	.00000	.00030	.00002	.00041	-.01992	-.00034	-.00334

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 45

CALL UMAL1146(EXT)KIH5.IV9.IC1 AT86AT87 T28.1

(RG0046) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XRRP = 1339.9100 IN. XC ALPHAW = 6.380 STAB = -1.970  
LREF = 327.7800 IN. YRRP = .0000 IN. YC ELV-18 = .000 ELV-08 = .000  
BREF = 2348.0000 IN. ZRRP = 190.7500 IN. ZC RUD-U = .000 RUD-L = .000  
SCALE = .0400 JTANK = .000 RTANK = .000

PARAMETRIC DATA

Q	BETA	ALPHAW	CL	CD	CLM	CY	CLN	CSL
36.260	-20.000	6.37000	.46100	.10480	-.12670	.50450	.00440	.05950
36.150	-16.000	6.37000	.48610	.11330	-.13550	.37790	.00590	.04930
36.110	-14.000	6.37000	.48990	.11610	-.10570	.31540	.00650	.04380
36.070	-12.000	6.37000	.48640	.11790	-.08190	.25960	.03770	.03800
36.040	-10.000	6.37000	.48100	.11960	-.05330	.20030	.01010	.03140
36.020	-8.000	6.37000	.47640	.12040	-.03230	.15190	.01250	.02600
36.010	-6.000	6.37000	.47700	.12030	-.01340	.10560	.01270	.01940
35.990	-4.000	6.37000	.47530	.11970	-.00480	.06930	.00980	.01350
35.980	-3.000	6.37000	.47340	.11930	-.00280	.05260	.00770	.01130
35.980	-2.000	6.38000	.47460	.11880	.00510	.03720	.00570	.00780
35.990	-1.000	6.38000	.47330	.11930	.01240	.02000	.00400	.00480
35.990	.000	6.38000	.47190	.11900	.01490	.00310	.00200	.00030
35.950	1.000	6.37000	.47220	.11890	.01430	-.00100	.00010	-.00260
35.930	2.000	6.38000	.47370	.11860	.01220	-.03180	.00190	-.00560
35.990	3.000	6.37000	.47640	.11910	.00460	-.04860	.00420	-.00900
35.990	4.000	6.37000	.47700	.11940	-.00250	-.06610	.00610	-.01190
36.000	6.000	6.37000	.47770	.11920	-.01400	-.10380	.00910	-.01710
36.020	8.000	6.37000	.47890	.11950	-.03230	-.14900	.00350	-.02440
36.040	10.000	6.37000	.48440	.11920	-.05480	-.19770	.00320	-.03100
36.070	12.000	6.37000	.48580	.11710	-.07910	-.25540	.00260	-.03700
36.100	14.000	6.37000	.48460	.11410	-.10930	-.30950	.00250	-.04160
36.140	16.000	6.37000	.48400	.11170	-.13530	-.36780	.00230	-.04650
36.240	20.000	6.37000	.45530	.09980	-.13390	-.48290	.00320	-.05530
	GRADIENT	.00000	.00022	-.00004	.00079	-.01700	-.00198	-.00328

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UAL1146

PAGE 47

CALL UAL1146(EXT)KIH15.1 C1 AT85AT87 T28.1

(RG0047) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.970  
ELV-IB = .000 ELV-OB = .000  
ITANK = .000 RTANK = .000

BETA	ALPHAM	CL	CO	CLM	CY	CLN	CSL
0	6.37000	.46070	.1190	-.13990	.39780	.05370	.05260
36.200	6.37000	.48590	.1140	-.13580	.23710	.04540	.04350
36.120	6.37000	.48340	.12090	-.10800	.23840	.04060	.03880
36.080	6.37000	.48530	.12220	-.08170	.19560	.03600	.03420
36.060	6.37000	.47870	.12130	-.05390	.15390	.03080	.02930
36.030	6.37000	.47590	.12100	-.02780	.11970	.02610	.02430
36.020	6.37000	.46930	.11900	-.00550	.08760	.02020	.01900
36.000	6.37000	.46510	.11600	.00910	.05830	.01440	.01280
35.990	6.38000	.46390	.11810	.01730	.04460	.01100	.01050
35.990	6.37000	.46420	.11410	.02550	.03140	.00740	.00760
35.990	6.38000	.46510	.11790	.03070	.01910	.00410	.00440
35.930	6.38000	.46500	.11820	.03390	.00540	.00080	.00100
35.990	6.38000	.46120	.11750	.03270	-.01090	-.00270	-.00150
35.990	6.38000	.46550	.11840	.03230	-.02410	-.00610	-.00500
35.990	6.32000	.46650	.11780	.02290	-.03690	-.00920	-.00760
4.000	6.37000	.46640	.11790	.01360	-.05040	-.01310	-.01110
6.000	6.37000	.47480	.11970	.00400	-.07920	-.01950	-.01680
8.000	6.37000	.47420	.12070	-.02410	-.11170	-.02530	-.02190
10.000	6.37100	.47800	.12240	-.04880	-.14800	-.03140	-.02680
12.000	5.37000	.47900	.12190	-.07810	-.18440	-.03620	-.03160
14.000	5.37000	.48210	.11990	-.10690	-.22680	-.04160	-.03620
16.000	5.37000	.48260	.11720	-.13160	-.27190	-.04670	-.03960
20.000	6.37000	.45910	.10700	-.14160	-.37490	-.05470	-.04910
GRADIENT	.00000	.00023	-.00005	.00084	-.01367	-.00341	-.00702

REFERENCE DATA

SREF = 5500.0000 SQ.FT.      XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN.      YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN.      ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

BETA = .000      RUD-U = .000  
 RUD-L = .000      ITANK = .000  
 RTANK = .000

RUN NO.      48/ 0      RN/L = .00      GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHAM	BETA	CL	CD	CLM	CY	CLN	CSL
36.030	-4.460	.00000	-.39570	.13820	-.00430	.00100	.00210	.00120
36.000	-2.280	.00000	-.22320	.11620	.01320	-.00110	.00200	.00160
35.990	-.100	.00000	-.04700	.10670	.03200	.00070	.00200	.00150
35.990	2.060	.00000	.12190	.10450	.05610	.00140	.00220	.00170
35.990	4.210	.00000	.28180	.10730	.07950	.00160	.00230	.00150
35.990	6.360	.00000	.44110	.11490	.09240	.00300	.00240	.00220
35.990	8.510	.00000	.60140	.12760	.10730	.00560	.00230	.00160
36.010	10.640	.00000	.74340	.15130	.14740	.00340	.00180	.00150
36.060	12.770	.00000	.87840	.19330	.17860	.00950	.00160	.00110
36.150	14.890	.00000	.99310	.25350	.20130	.00600	.00190	.00160
36.250	16.960	.00000	1.09800	.32620	.23870	.00360	.00240	.00140
36.370	18.970	.00000	1.17320	.33860	.25450	.01440	.00060	.00120
36.480	20.950	.00000	1.19610	.46270	.28920	.01840	.00040	.00090
36.590	23.000	.00000	1.23230	.53140	.31010	.01940	-.00080	.00240
25.050	25.050	.00000	1.26140	.59840	.32280	.01910	-.00170	.00280
GRADIENT		.00000	.07842	-.00340	.00971	.00017	.00003	.00003

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

(R00049) ( 14 NOV 75 )

CALL UVAL1146(EXT)KI V9.1C1 AT30AT91 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 RUD-U = .000  
RUD-L = .000 ITANK = .000  
RTANK = .000

RUN NO 49/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHAM	BETA	CL	CD	CLM	CY	CLN	CSL
35.030	-4.470	.00000	-.40250	.14230	-.00250	-.00030	.00240	.00140
36.000	-2.280	.00000	-.22720	.12020	-.00230	-.00110	.00200	.00140
35.990	-1.190	.00000	-.05140	.11020	-.04200	.00060	.00200	.00140
35.990	2.060	.00000	.12130	.10770	.06740	-.00030	.00220	.00080
35.990	4.210	.00000	.28220	.11080	.09180	.00200	.00210	.00170
35.990	6.360	.00000	.44240	.11810	.11150	.00270	.00170	.00150
35.990	8.510	.00000	.60460	.12130	.12820	.00500	.00140	.00140
36.020	10.640	.00000	.74470	.15480	.16500	.00690	.00100	.00150
35.070	12.730	.00000	.88340	.15780	.20250	.00870	.00080	.00110
36.150	14.830	.00000	1.00690	.25760	.22250	.00820	.00180	.00180
35.260	15.950	.00000	1.10950	.32890	.26380	.00420	.00180	.00150
36.370	19.930	.00000	1.19250	.40490	.29890	.00770	.00110	.00050
36.490	20.930	.00000	1.20900	.47030	.31180	.01500	-.00060	.00110
36.610	23.010	.00000	1.24880	.54100	.32980	.01700	-.00100	.00210
36.720	25.050	.00000	1.27510	.50660	.34210	.01540	-.00140	.00250
GRADIENT		.00000	.07917	-.00349	.01086	.00025	-.00302	-.00000

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TABULATED SOURCE FORCE DATA - CALL ( UNAL1145 )

PAGE 50

CALL10P\L1146(EXTIKI145.1) C1 AT90AT91 T28.1

(R00050) ( 14 NOV 75 )

REFERENCE DATA

SREF = 9500.0000 50.FT. XHRP = 1399.9100 IN. XC  
 LREF = 327.7800 IN. YHRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZHRP = 190.7500 IN. ZC  
 SCALE = .0400

ALPHA = 6.380 STAB = -1.920  
 ELV-18 = .000 ELV-08 = .000  
 ITANK = .000 RTANK = .000

PARAMETRIC DATA

RUN NO. 50/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.200	6.37000	.47000	.11990	-.13740	.36770	.04850	.05780
36.120	6.37000	.48580	.12550	-.11360	.26920	.04110	.04650
36.090	6.37000	.48710	.12650	-.08780	.22670	.03700	.04210
36.060	6.37000	.48370	.12640	-.05280	.19610	.03270	.03680
36.040	6.37000	.48150	.12560	-.03180	.14750	.02650	.03140
36.020	6.37000	.47180	.12450	-.01200	.11320	.02380	.02540
36.010	6.37000	.46890	.12330	.00620	.08400	.01870	.02010
36.000	6.37000	.46510	.12200	.02200	.05620	.01320	.01410
35.990	6.37000	.46390	.12000	.03020	.04300	.01000	.01100
35.980	6.37000	.46510	.12140	.04000	.02990	.00670	.00760
35.970	6.37000	.46630	.12140	.04520	.01690	.00360	.00420
35.960	6.37000	.46190	.12150	.04490	.00450	.00090	.00140
35.950	6.37000	.46170	.12170	.04150	-.00590	-.00240	-.00260
35.940	6.37000	.461	.12250	.04190	-.02290	-.00560	-.00540
35.930	6.37000	.463	.12220	.03140	-.03730	-.00890	-.00830
35.920	6.37000	.46350	.12190	.02610	-.05020	-.01220	-.01180
35.910	6.37000	.46970	.12900	.00820	-.07700	-.01810	-.01730
35.900	6.37000	.47360	.12480	-.01150	-.10730	-.02370	-.02340
35.890	6.37000	.47210	.12580	-.03160	-.14030	-.02380	-.02850
35.880	6.37000	.47780	.12600	-.05390	-.17650	-.03340	-.03360
35.870	6.37000	.48190	.12490	-.07980	-.21440	-.03790	-.03330
35.860	6.37000	.47960	.12360	-.10680	-.25610	-.04210	-.04350
35.850	6.37000	.46300	.11530	-.13620	-.35040	-.04310	-.05370
35.840	6.37000	.46000	.00000	.00033	-.01331	-.00315	-.00324

GRADIENT

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CAL ( UAL1146 )

PAGE 51

(R00051) ( 14 NOV 75 )

CAL11461146(EXT)KIM:5.1V9.1C1 A190AT31 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7300 IN.  
BREF = 2348.0300 IN.  
SCALE = 0.000

KRRP = 1339.9100 IN. XC  
LRRP = .0000 IN. YC  
ZRRP = 130.7500 IN. ZC

ALPHA = 6.380 STAB = -1.920  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

PARAMETRIC DATA

RUN NO. 51/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

BETA	ALPHA	CL	CO	CLP	CY	CLN	CSL
36.270	6.37000	.45300	.11120	-.11290	.50310	-.01330	.06840
36.160	6.37000	.49850	.11620	-.11420	.37970	-.00960	.05510
36.110	6.37000	.49150	.11630	-.09620	.32050	-.00650	.04850
36.060	6.37000	.48700	.12040	-.07000	.26210	-.00230	.04240
36.050	6.37000	.48510	.12180	-.04520	.20420	.00260	.03480
36.010	6.37000	.48120	.12300	-.02660	.15320	.00660	.02830
36.010	6.37000	.47830	.12350	-.01100	.11040	.00730	.02220
36.000	6.37000	.47530	.12260	.00270	.07330	.00660	.01530
35.000	6.37000	.47560	.12280	.00930	.05400	.00540	.01170
35.950	6.37000	.47330	.12280	.01660	.03630	.00420	.00850
35.930	6.37000	.47770	.12290	.02180	.01760	.00310	.00480
35.900	6.37000	.47230	.12280	.02120	.00350	.00170	.00130
35.900	6.37000	.47630	.12300	.02240	-.01670	.00040	-.00260
35.700	6.37000	.47400	.12310	.02110	-.03500	-.00060	-.00550
36.000	6.37000	.47350	.12280	.01090	-.05110	-.00180	-.00900
36.010	6.37000	.47720	.12320	.00400	-.06910	-.00300	-.01220
36.010	6.37000	.47910	.12320	-.01100	-.10930	-.00430	-.01980
36.030	6.37000	.48100	.12400	-.02520	-.15170	-.00340	-.02550
36.030	6.37000	.48180	.12180	-.05070	-.20420	.00110	-.03320
36.080	6.37000	.48380	.11930	-.06770	-.25970	.00530	-.03950
36.110	6.37000	.48920	.11710	-.09250	-.31740	.01010	-.04650
36.150	6.37000	.48140	.11350	-.11520	-.37300	.01240	-.05120
36.000	6.37000	.46150	.10520	-.11970	-.48050	.01340	-.06160
GRADIENT	00000	.00003	.00004	.00023	-.01770	-.00120	-.00346

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 52

(RG0052) ( 14 NOV 75 )

CALLUMAL1146(EXT)KIH15.6V9.1C1 AT90AT91 T28.1

# REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

# PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.920  
 ELEV-IB = .000 ELEV-OB = .000  
 RUD-U = .000 RUD-L = .000  
 ITANK = .000 RTANK = .000

RUN NO. 52/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

BETA	ALPHA	CL	CO	CLM	CY	CLN	CSL
36.290	6.37000	.45480	.11150	-.08290	.53300	-.03150	.05530
36.170	6.37000	.47930	.11530	-.08920	.41140	-.02920	.05420
36.130	6.37000	.49030	.11790	-.09380	.35070	-.02460	.04880
36.090	6.37000	.49610	.11980	-.09520	.29020	-.01940	.04260
36.060	6.37000	.48910	.12160	-.09040	.22810	-.01140	.03480
36.030	6.37000	.48390	.12290	-.08320	.17590	-.00560	.02850
36.020	6.37000	.48410	.12380	-.08160	.12620	-.00160	.02160
36.000	6.37000	.48240	.12420	-.08070	.08340	.00060	.01420
36.000	6.37000	.48040	.12430	-.08090	.06240	.00130	.01160
36.000	6.37000	.48160	.12400	-.08030	.04110	.00160	.00780
36.000	6.37000	.47990	.12380	-.08050	.02050	.00210	.00440
36.000	6.37000	.48010	.12440	-.08350	.00110	.00270	.00090
36.000	6.37000	.46320	.12450	.01460	-.02070	.00310	-.00300
36.000	6.37000	.48080	.12420	.01290	-.03900	.00330	-.00600
36.000	6.37000	.48290	.12450	.01100	-.05900	.00350	-.00530
36.000	6.37000	.48310	.12430	-.02470	-.08130	.00430	-.01370
36.020	6.37000	.48270	.12400	-.01980	-.11290	.00640	-.02020
36.030	6.37000	.48520	.12240	-.03240	-.17340	.01010	-.02700
36.060	6.37000	.48680	.12220	-.05490	-.22900	.01640	-.03400
36.090	6.37000	.48720	.11990	-.05910	-.28620	.02310	-.04090
36.120	6.37000	.48660	.11740	-.08430	-.34770	.02960	-.04710
36.170	6.37000	.47470	.11330	-.08930	-.40670	.03320	-.05180
36.270	6.37000	.45540	.10580	-.08240	-.51610	.03370	-.05180
GRADIENT	.00000	.00017	.00003	.00009	-.02041	.00043	-.00351

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 53

(RG0053) ( 14 NOV 75 )

CALLUHAL1146(EXT)KIH15.8V9.1C1V12 AT90AT91 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

ALPHA = 6.380 STAB = -1.920  
 ELV-1B = .000 ELV-08 = .000  
 RUO-U = .000 RUO-L = .000  
 ITANK = .000 RTANK = .000

PARAMETRIC DATA

Q	BETA	ALPHA	CL	CO	CLM	CY	CLN	CSL
36.350	-20.000	6.37000	.45610	.11120	-.07590	.63970	-.08960	.08660
36.220	-16.000	6.37000	.49190	.11530	-.09480	.50780	-.08080	.07360
36.160	-14.000	6.37000	.48810	.11780	-.09650	.43430	-.06970	.06510
36.120	-12.000	6.37000	.50050	.12130	-.07750	.36420	-.05900	.05650
36.080	-10.000	6.37000	.49620	.12340	-.06120	.29580	-.04710	.04730
36.050	-8.000	6.37000	.49000	.12430	-.04270	.22990	-.03450	.03810
36.020	-6.000	6.37000	.48230	.12480	-.02330	.16700	-.02360	.02910
36.010	-4.000	6.37000	.48510	.12560	-.01480	.11350	-.01510	.02080
36.000	-3.000	6.37000	.48750	.12590	-.00920	.08810	-.01110	.01600
36.000	-2.000	6.37000	.48860	.12630	-.00430	.05880	-.00660	.01150
36.000	-1.000	6.37000	.48720	.12600	.00320	.03010	-.00240	.00590
36.000	.000	6.37000	.48580	.12600	.00420	.00710	.00110	.00170
36.000	1.000	6.37000	.48810	.12620	.02500	-.02940	.00670	-.00460
36.000	2.000	6.37000	.48980	.12630	.00120	-.05700	.01070	-.00850
36.000	3.000	6.37000	.48580	.12570	-.00660	-.07900	.01360	-.01300
36.010	4.000	6.37000	.48840	.12550	.01650	-.10830	.01830	-.01850
36.020	6.000	6.37000	.48860	.12430	.03350	-.16550	.02690	-.02790
36.040	8.000	6.37000	.49090	.12440	-.04990	-.22370	.03660	-.03680
36.070	10.000	6.37000	.49370	.12190	-.07150	-.28970	.04910	-.04610
36.110	12.000	6.37000	.49140	.12030	-.08410	-.35790	.06120	-.05470
36.160	14.000	6.37000	.49540	.11690	-.09640	-.42770	.07180	-.06300
36.210	16.000	6.37000	.48680	.11350	-.09400	-.49910	.08230	-.07020
36.330	20.000	6.37000	.45370	.10480	-.08190	-.62990	.09370	-.08340
	GRADIENT	.00000	.00012	-.00001	.00014	-.02799	.00420	-.00491

RUN NO. 53/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

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TABULATED SOURCE FORCE DATA - CA11 ( UNAL1146 )

PAGE 54

(RG0054) ( 14 NOV 75 )

CA11UNAL1146(EXT)KIH15.6V9.1CIV11 AT90AT91 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.920  
ELV-1B = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 54/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.33C	-20.000	6.37000	.45580	.11260	-.07650	.59550	-.06410	.07700
36.200	-16.000	6.37000	.49100	.11640	-.09560	.46490	-.05820	.06500
36.150	-14.000	6.37000	.49690	.11980	-.09160	.40170	-.05140	.05850
36.110	-12.000	6.37000	.49810	.12150	-.07040	.33420	-.04260	.05130
36.070	-10.000	6.37000	.49510	.12310	-.06050	.26910	-.03270	.04300
36.040	-8.000	6.37000	.48830	.12450	-.03680	.20710	-.02300	.03460
36.020	-6.000	6.37000	.48930	.12390	-.02230	.15090	-.01430	.02670
36.010	-4.000	6.37000	.48690	.12530	-.01050	.10020	-.00860	.01820
36.000	-3.000	6.37000	.48490	.12470	-.00510	.07430	-.00570	.01380
36.000	-2.000	6.37000	.48790	.12530	.00070	.04920	-.00270	.00910
36.000	-1.000	6.37000	.48460	.12530	.00470	.02670	-.00040	.00580
36.000	.000	6.37000	.48640	.12550	.00520	.00060	.00240	.00090
36.000	1.000	6.37000	.48660	.12530	.00570	-.02440	.00500	-.00420
36.000	2.000	6.37000	.48760	.12560	.00120	-.05080	.00810	-.00800
36.000	3.100	6.37000	.48720	.12560	-.00570	-.07370	.01030	-.01210
36.010	4.000	6.37000	.48600	.12500	-.01410	-.09990	.01360	-.01630
36.020	6.000	6.37000	.48750	.12380	-.02890	-.14930	.01930	-.02530
36.040	8.000	6.37000	.49140	.12410	-.04110	-.20730	.02730	-.03340
36.070	10.000	6.37000	.49230	.12360	-.06350	-.27010	.03800	-.04170
36.110	12.000	6.37000	.49330	.12130	-.07440	-.33180	.04650	-.04920
36.150	14.000	6.37000	.49350	.11860	-.09100	-.39710	.05510	-.05670
36.200	16.000	6.37000	.48430	.11650	-.09000	-.46280	.06240	-.06290
36.310	20.000	6.37000	.45770	.10830	-.07990	-.58440	.06960	-.07430
GRADIENT	.00000	.00000	.00000	.00004	-.00024	-.02479	.00272	-.00431

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 55

CALLUHAL1146(EXT)KIH15.6V9.1CIV11 ATSDAT91 T28.1

(RG0055) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = -1.920  
ELV-IB = .000 ELV-OP = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 55/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
36.040	-4.440	.00000	-1.45370	.14550	.21140	-.00290	.00330	.00010
36.010	-2.250	.00000	-.26310	.12290	.18200	-.00450	.00300	.00130
36.000	-.070	.00000	-.07010	.11320	.14300	-.00130	.00280	.00180
36.000	2.080	.00000	.12460	.11180	.10640	-.00250	.00310	.00080
36.000	4.230	.00000	.30550	.11590	.06210	.00040	.00260	.00110
36.000	6.370	.00000	.48350	.12540	.00690	.00100	.00260	.00130
36.000	8.520	.00000	.66540	.14210	-.04190	.00370	.00210	.00150
36.030	10.650	.00000	.82260	.17010	-.06180	.00730	.00110	.00160
36.090	12.780	.00000	.97700	.21840	-.07520	.00980	.00070	.00110
36.180	14.830	.00000	1.10440	.28240	-.08960	.01010	.00100	.00140
36.290	16.960	.00000	1.21980	.35160	-.08950	.00710	.00190	.00110
36.410	18.950	.00000	1.29790	.43780	-.11390	.01320	.00100	.00050
36.540	20.910	.00000	1.33370	.51280	-.13330	.01670	.00010	.00080
36.670	22.930	.00000	1.35540	.59320	-.18100	.01610	-.00060	.00250
36.960	24.960	.00000	1.44070	.67290	-.26570	.01780	-.00100	.00320
GRADIENT		.00000	.08796	-.00325	-.01726	.00040	-.00000	.00007

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TABULATED SOURCE FORCE DATA - C-11 ( UMAL1146 )

PAGE 56

(RG0056) ( 14 NOV 75 )

CALLUMAL1146(EXTN)K1H15.6V9.1C1V11 AT90AT91 128.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0300 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHAH = 6.380 STAB = -1.920  
ELV-IB = .000 ELV-CB = .000  
RUD-U = 25.000 RUD-L = 25.000  
ITANK = .000 RTANK = .000

RUN NO. 56/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAH	CL	CD	CLM	CY	CLN	CSL
36.380	-20.000	6.37000	.45230	.12090	-.04830	.65150	-.09190	.08100
36.240	-16.000	6.37000	.49250	.12350	-.08280	.53090	-.09970	.06970
36.190	-14.000	6.37000	.49630	.12510	-.08290	.46950	-.08530	.06250
36.140	-12.000	6.37000	.49750	.12740	-.06080	.40520	-.07700	.05530
36.100	-10.000	6.37000	.49640	.12880	-.04400	.33400	-.06570	.04740
36.070	-8.000	6.37000	.48840	.12910	-.02270	.26880	-.05440	.03800
36.040	-6.000	6.37000	.48690	.12860	-.01040	.20500	-.04270	.02960
36.020	-4.000	6.37000	.48800	.13100	.00100	.15610	-.03620	.02150
36.020	-3.000	6.37000	.48500	.13130	.00550	.12970	-.03330	.01740
36.010	-2.000	6.37000	.48810	.13080	.01170	.10420	-.03050	.01320
36.010	-1.000	6.37000	.48570	.13080	.01600	.07860	-.02710	.00950
36.010	.000	6.37000	.48940	.13150	.01490	.05420	-.02490	.00530
36.010	1.000	6.37000	.48920	.13180	.01480	.03650	-.02260	.00020
36.010	2.000	6.37000	.49000	.13210	.01470	.00470	-.02000	-.00410
36.010	3.000	6.37000	.48600	.13150	.00650	-.02290	-.01660	-.00900
36.010	4.000	6.37000	.49090	.13120	-.00220	-.05200	-.01180	-.01360
36.020	6.000	6.37000	.48050	.13050	-.01340	-.10530	-.00490	-.02220
36.040	8.000	6.37000	.49220	.13080	-.02260	-.16000	.00200	-.02990
36.070	10.000	6.37000	.48980	.13110	-.04090	-.21650	.00320	-.03800
36.100	12.000	6.37000	.48600	.13000	-.05230	-.27420	.01800	-.04460
36.140	14.000	6.37000	.48920	.12890	-.06030	-.33880	.02470	-.05180
36.180	16.000	6.37000	.47870	.12350	-.07120	-.40520	.03240	-.05820
36.290	20.000	6.37000	.45400	.11510	-.06330	-.52450	.03910	-.07030
	GRADIENT	.00000	.00032	.00008	-.00008	-.02562	.04289	-.00439

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TABULATED SOURCE FORCE DATA - CA11 ( UNAL1146 )

PAGE 57

(RG0057) ( 14 NOV 75 )

CA1:UNAL1146(EXTIKI)H5.6V9.1C1 AT90AT91 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 6.390 STAB = -1.920  
ELV-1B = .000 ELV-0B = .000  
RUD-U = 25.000 RUD-L = 25.000  
ITANK = .000 RTANK = .000

RUN NO. 57/ 0 PN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.330	-20.000	6.37000	.45280	.12040	-.04810	.58600	-.05950	.06920
36.270	-18.000	6.37000	.46640	.12050	-.06350	.53000	-.06160	.06380
36.210	-16.000	6.37000	.47840	.12150	-.07350	.47470	-.06290	.05880
36.170	-14.000	6.37000	.48530	.12310	-.06930	.41950	-.06070	.05290
36.120	-12.000	6.37000	.48530	.12490	-.05210	.35700	-.05440	.04630
36.090	-10.000	6.37000	.48520	.12730	-.03060	.29610	-.04650	.03910
36.060	-8.000	6.37000	.48000	.12770	-.01200	.23710	-.03420	.03210
36.030	-6.000	6.37000	.48040	.12840	.00010	.17980	-.03020	.02480
36.020	-4.000	6.37000	.47620	.12850	.00970	.13570	-.02780	.01810
36.010	-2.000	6.37000	.47790	.12940	.02280	.09510	-.02660	.01160
36.010	-1.000	6.37000	.48190	.12930	.02490	.07620	-.02550	.00900
36.010	.000	6.37000	.48000	.12980	.02730	.05900	-.02590	.00450
36.010	1.000	6.37000	.48170	.13040	.02430	.03900	-.02550	.00180
36.010	2.000	6.37000	.48160	.13000	.02250	.01420	-.02500	-.00230
36.010	3.000	6.37000	.48020	.12970	.01360	-.00820	-.02420	-.00630
36.010	4.000	6.37000	.48130	.13010	.00870	-.03070	-.02240	-.00960
36.020	6.000	6.37000	.47910	.12990	-.00110	-.07710	-.01980	-.01660
36.030	8.000	6.37000	.47970	.13010	-.01450	-.11950	-.01830	-.02280
36.050	10.000	6.37000	.48400	.12990	-.03310	-.17000	-.01550	-.02950
36.070	11.000	6.37000	.48530	.12940	-.03960	-.19930	-.01290	-.03340
36.080	12.000	6.37000	.48690	.12900	-.04510	-.22730	-.01010	-.03610
36.110	14.000	6.37000	.47820	.12570	-.05580	-.28550	-.00430	-.04240
36.150	16.000	6.37000	.47540	.12160	-.06870	-.34570	.00080	-.04750
36.190	18.000	6.37000	.47110	.11760	-.07620	-.39850	.00170	-.05320
36.240	20.000	6.37000	.45740	.11250	-.07430	-.45470	.00110	-.05840
	GRADIENT	.00000	.00056	.00016	-.00014	-.02009	.00057	-.00350

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OF POOR QUALITY

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TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 58

CALL UVAL1146(EXT)K1H15.6V9.4CIV11 AT90AT91 128.)

(RG0058) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SO.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALF = .0400

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.920  
ELV-19 = .000 ELV-08 = .000  
RJD-U = 25.000 RJD-L = 25.000  
ITANK = .000 RTANK = .000

RUN NO. 58/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CO	CLM	CY	CLN	CSL
36.380	-20.000	6.37000	.44680	.11890	-.04600	.66280	-.09970	.08270
36.250	-18.000	6.37000	.48510	.12300	-.08110	.54550	-.09960	.07230
36.190	-14.000	6.37000	.49420	.12370	-.07990	.48270	-.09490	.06490
36.140	-12.000	6.37000	.49480	.12600	-.06010	.41640	-.08590	.05800
36.100	-10.000	6.37000	.48740	.12710	-.04010	.34400	-.07320	.04870
36.070	-9.000	6.37000	.48410	.12820	-.02110	.27870	-.06080	.04060
36.040	-6.000	6.37000	.48260	.12890	-.00610	.21370	-.04790	.03100
36.020	-4.000	6.37000	.48330	.13010	.00020	.16380	-.04120	.02290
36.020	-3.000	6.37000	.47970	.13000	.00690	.13780	-.03810	.01870
36.010	-2.000	6.37000	.48290	.13080	.01240	.11180	-.03500	.01470
36.010	-1.000	6.37000	.48580	.13090	.01940	.08620	-.03150	.00970
36.010	.000	6.37000	.48190	.13090	.01840	.05400	-.02890	.00650
36.010	1.000	6.37000	.48420	.13150	.01830	.03390	-.02550	.00080
36.010	2.000	6.37000	.48690	.13150	.01620	.00970	-.02270	-.00340
36.010	3.000	6.37000	.48450	.13080	.00770	-.01840	-.01920	-.00760
36.010	4.000	6.37000	.49430	.13040	.00130	-.04760	-.01400	-.01270
36.020	6.000	6.37000	.48320	.13030	-.01230	-.10240	-.00630	-.02160
36.040	8.000	6.37000	.48940	.13100	-.02140	-.15690	.00040	-.02460
36.070	10.000	6.37000	.48660	.13060	-.04180	-.21550	.00930	-.03830
36.100	12.000	6.37000	.48850	.12940	-.05320	-.28160	.01910	-.04600
36.140	14.000	6.37000	.48370	.12660	-.06340	-.34740	.02770	-.05290
36.180	16.000	6.37000	.47650	.12290	-.06360	-.41140	.03600	-.05880
36.280	20.000	6.37000	.45590	.11340	-.06210	-.52450	.04170	-.07040
GRADIENT	.00000	.00000	.00042	.00008	.00022	-.02618	.00327	-.00444

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 59

CALL UMAL1146(EXT)K1H15.6V9.IC1V11 AT90AT91 T28.1

(RG0059) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.360 STAB = -1.920  
ELV-IB = .000 ELV-OB = .000  
RUD-U = 25.000 RUD-L = 25.000  
ITANK = .000 RTANK = .000  
RUOT-U = 25.000 RUOT-L = 25.000

RUN NO. 59/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.400	-20.000	6.37000	.44740	.12930	-.02190	.67350	-.10470	.08260
36.280	-16.000	6.37000	.47890	.13320	-.05400	.56540	-.10670	.07190
36.220	-14.000	6.37000	.48390	.13350	-.05280	.50500	-.10350	.06540
36.170	-12.000	6.37000	.48420	.13540	-.03410	.43950	-.09550	.05760
36.130	-10.000	6.37000	.48060	.13650	-.01150	.37000	-.08430	.04910
36.090	-8.000	6.37000	.47700	.13590	.00430	.30240	-.07170	.04100
36.060	-6.000	6.37000	.47580	.13570	.01770	.23670	-.05790	.03130
36.050	-5.000	6.37000	.47530	.13580	.01910	.20590	-.05220	.02740
36.040	-4.000	6.37000	.47620	.13640	.01970	.18010	-.04910	.02310
36.030	-3.000	6.37000	.47610	.13730	.02670	.15500	-.04620	.01940
36.030	-2.000	6.37000	.47690	.13770	.03400	.13250	-.04430	.01540
36.020	-1.000	6.37000	.47580	.13760	.04110	.10410	-.04080	.01150
36.020	.000	6.37000	.47510	.13900	.04290	.08380	-.03920	.00700
36.020	1.000	6.37000	.47560	.13970	.04410	.05910	-.03740	.00200
36.020	2.000	6.37000	.47410	.13920	.04180	.03310	-.03460	-.00180
36.020	3.000	6.37000	.47520	.13880	.03660	.00820	-.03210	-.00610
36.020	4.000	6.37000	.48010	.13900	.02800	-.02400	-.02620	-.01110
36.030	6.000	6.37000	.47330	.13590	.01200	-.08390	-.01610	-.01980
36.050	8.000	6.37000	.47980	.13780	.00420	-.13910	-.00930	-.02850
36.080	10.000	6.37000	.47520	.13910	-.01070	-.19570	-.00260	-.03660
36.110	12.000	5.37000	.48020	.13900	-.02250	-.25700	.00520	-.04390
36.140	14.000	6.37000	.47460	.13550	-.03400	-.31770	.01280	-.05050
36.190	16.000	6.37000	.47140	.13110	-.04530	-.38500	.02080	-.05720
36.280	20.000	6.37000	.44960	.12010	-.04690	-.50430	.02840	-.06950
	GRADIENT	-.00000	.00013	.00038	.00185	-.02498	.00263	-.00425

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 60

CALL UMAL1146(EXTIK)H15.6V9.4C1V11 AT90AT91 T28.1

(RG0060) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7000 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XPRP = 1339.9100 IN. XC  
YPRP = .0000 IN. YC  
ZPRP = 190.7500 IN. ZC

ALPHA = 6.380 STAB = -1.920  
ELV-LB = .000 ELV-OB = .030  
RUD-U = .000 RUD-L = .030  
ITANK = .000 RTANK = .030

## PARAMETRIC DATA

RUN NO. 60/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.330	-20.000	6.37000	.46120	.11320	-.07910	.60170	-.06970	.07940
36.210	-16.000	6.37000	.49040	.11720	-.09370	.47740	-.06480	.06740
36.150	-14.000	6.37000	.49660	.11930	-.08950	.40880	-.05710	.05990
36.110	-12.000	6.37000	.50060	.12200	-.07410	.34370	-.04780	.05240
36.070	-10.000	6.37000	.49450	.12330	-.05910	.27610	-.03690	.04420
36.040	-8.000	6.37000	.48860	.12360	-.03810	.21070	-.02550	.03510
36.020	-6.000	6.37000	.48330	.12460	-.02340	.15250	-.01650	.02700
36.010	-4.000	6.37000	.48820	.12530	-.01160	.10400	-.01030	.01900
36.000	-3.000	6.37000	.48650	.12530	-.00190	.07620	-.00670	.01390
36.000	-2.000	6.37000	.48800	.12590	.00260	.05210	-.00410	.00960
36.000	-1.000	6.37000	.48690	.12610	.00990	.02510	.00090	.00530
36.000	.000	6.37000	.48610	.12600	.00740	.00040	.00220	.00110
36.000	1.000	6.37000	.49050	.12600	.00920	-.02740	.00580	-.00400
36.000	2.000	6.37000	.48440	.12570	.00680	-.04760	.00830	-.00840
36.000	3.000	6.37000	.48400	.12560	-.00360	-.07520	.01150	-.01290
36.010	4.000	6.37000	.48910	.12580	-.01000	-.10240	.01490	-.01680
36.020	6.000	6.37000	.49150	.12460	-.02130	-.15490	.02160	-.02570
36.040	8.000	6.37000	.49200	.12440	-.04270	-.21160	.03020	-.03450
36.070	10.000	6.37000	.49510	.12420	-.06490	-.27760	.04210	-.04300
36.110	12.000	6.37000	.49560	.12310	-.07720	-.34460	.05320	-.05110
36.150	14.000	6.37000	.49620	.11930	-.08620	-.40750	.06170	-.06830
36.200	16.000	6.37000	.48580	.11650	-.09070	-.46950	.06780	-.06430
36.320	20.000	6.37000	.45700	.10800	-.07490	-.59130	.07400	-.07540
GRADIENT		.00000	-.00006	.00003	.00015	-.02553	.00311	-.00448

REFERENCE DATA

SREF = 5500.0000 SQ.FT.      XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN.      YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN.      ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380      STAB = -1.920  
 ELV-IB = .000      ELV-OB = .000  
 RUD-U = .000      RUD-L = .000  
 ITANK = 3.000      RTANK = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.240	-20.000	6.37000	.47210	.09810	-.05430	.59330	.00530	.05970
36.120	-16.000	6.37000	.47890	.10520	-.05340	.44800	.00080	.04830
36.070	-14.000	6.37000	.48220	.10820	-.04570	.37710	.00060	.04350
36.030	-12.000	6.37000	.48370	.11210	-.03010	.31020	.00040	.03850
35.990	-10.000	6.37000	.47950	.11480	-.01520	.24630	.00120	.03290
35.970	-8.000	6.38000	.47560	.11540	.00300	.18560	.00320	.02560
35.950	-6.000	6.38000	.47540	.11700	.01500	.13430	.00440	.02050
35.940	-4.000	6.38000	.46930	.11750	.02840	.08810	.00410	.01400
35.930	-3.000	6.38000	.46570	.11760	.03380	.06590	.00420	.01100
35.930	-2.000	6.38000	.46970	.11800	.03900	.04420	.00360	.00690
35.930	-1.000	6.38000	.47120	.11770	.03700	.02420	.00300	.00450
35.930	.000	6.38000	.46830	.11850	.03600	.00260	.00270	.00080
35.930	1.000	6.38000	.47010	.11870	.03610	-.01720	.00270	-.00210
35.930	2.000	6.38000	.46990	.11870	.03420	-.03840	.00200	-.00570
35.930	3.000	6.38000	.47140	.11830	.03020	-.05950	.00150	-.00900
35.940	4.000	6.38000	.47340	.11840	.02280	-.08330	.00110	-.01250
35.950	6.000	6.38000	.47310	.11690	.00950	-.13130	.00090	-.01810
35.970	8.000	6.38000	.47140	.11540	-.00610	-.18360	.00230	-.02480
35.990	10.000	6.37000	.47470	.11400	-.02430	-.24180	.00340	-.03090
36.020	12.000	6.37000	.47420	.11170	-.03720	-.30470	.00450	-.03590
36.060	14.000	6.37000	.47200	.10780	-.05260	-.36950	.00420	-.04030
36.110	16.000	6.37000	.47020	.10340	-.06180	-.43430	.00180	-.04530
36.220	20.000	6.37000	.45410	.09220	-.06500	-.56740	-.00570	-.05430
GRADIENT	.00000	.00050	.00014	.00014	-.00073	-.02114	-.00039	-.00330

RUN NO. 61/ 0      RN/L = .00      GRADIENT INTERVAL = -5.00/ 5.00

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TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 62

(RG0062) ( 14 NOV 75 )

CA11UHAL1146(EXT)KIH15.6V9.4 AT83AT80 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XPRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YPRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZPRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = -1.920  
ELV-1B = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = 3.000 RTANK = .000

RUN NO. 62/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.960	-4.440	.00000	-.43090	.13540	.25810	-.00330	.00260	.00100
35.940	-2.250	.00000	-.24000	.11400	.20060	-.00220	.00260	.00190
35.930	-.070	.00000	-.05640	.10530	.16220	-.00150	.00290	.00110
35.930	2.080	.00000	.12510	.10380	.13100	-.00040	.00290	.00160
35.930	4.230	.00000	.29240	.10820	.08770	.00140	.00270	.00140
35.930	6.380	.00000	.47330	.11840	.03570	.00460	.00250	.00130
35.940	8.520	.00000	.64380	.13390	.01860	.00750	.00210	.00120
35.960	10.650	.00000	.79490	.15060	-.05270	.01240	.00170	.00130
36.020	12.780	.00000	.94180	.20710	-.07520	.01600	.00150	.00080
36.110	14.890	.00000	1.06500	.27020	-.09660	.02110	.00100	.00200
36.220	16.960	.00000	1.17330	.34430	-.10950	.02230	.00060	.00230
36.330	18.950	.00000	1.24170	.41670	-.11830	.02270	.00100	.00040
36.450	20.910	.00000	1.25870	.48350	-.14570	.02100	-.00030	.00120
36.570	22.940	.00000	1.30180	.55560	-.22660	.02000	-.00080	.00250
36.690	24.960	.00000	1.33970	.62530	-.32710	.01720	-.00140	.00280
GRADIENT		.00000	.08361	-.00299	-.01894	.00052	.00002	.00002

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 63

CALLUMAL1146(EXT)KIH15.6V9.4 AT83AT80 128.1

(R00063) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHA = 6.380 STAB = 1.920  
ELV-1B = .000 EIV-08 = .000  
RUD-U = 25.000 RCL-L = 25.000  
ITANK = 3.000 RTANK = .000

0	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.290	-20.000	6.37000	.46240	.10370	-.03610	.65430	-.02830	.05410
36.160	-16.000	6.37000	.47540	.11060	-.04300	.51700	-.03290	.05440
36.100	-14.000	6.37000	.47220	.11330	-.02780	.44390	-.03360	.04820
36.060	-12.000	6.37000	.47220	.11660	-.00910	.37490	-.03330	.04240
36.020	-10.000	6.37000	.47050	.11840	.00640	.30620	-.03130	.03650
35.990	-8.000	6.37000	.46690	.11950	.02220	.24870	-.02850	.03080
35.960	-6.000	6.38000	.46800	.11990	.03310	.18770	-.02430	.02420
35.950	-4.000	6.38000	.46310	.12060	.03900	.14230	-.02270	.01800
35.940	-3.000	6.38000	.46240	.12060	.04300	.11780	-.02170	.01450
35.940	-2.000	6.38000	.46320	.12050	.04230	.09480	-.02170	.01140
35.940	-1.000	6.38000	.46310	.12080	.04390	.07250	-.02210	.00860
35.930	.000	6.38000	.46140	.12150	.04060	.05390	-.02320	.00530
35.930	1.000	6.38000	.46700	.12220	.04060	.03280	-.02360	.00180
35.940	2.000	6.38000	.46570	.12280	.04140	.01220	-.02470	-.00030
35.940	3.000	6.38000	.46270	.12330	.03870	-.00930	-.02520	-.00420
35.940	4.000	6.38000	.46890	.12220	.03640	-.03290	-.02570	-.00760
35.950	6.000	6.38000	.47230	.12330	.02280	-.08130	-.02520	-.01380
35.960	8.000	6.38000	.47200	.12160	.01260	-.12850	-.02700	-.01940
35.980	10.000	6.38000	.47250	.12000	-.00710	-.18500	-.02800	-.02540
36.310	12.000	6.37000	.47110	.11680	-.02320	-.24580	-.03000	-.03000
36.050	14.000	6.37000	.46960	.11560	-.03630	-.30550	-.03180	-.03530
36.090	16.000	6.37000	.46310	.11120	-.03760	-.36570	-.03420	-.03920
36.180	20.000	6.37000	.44570	.09860	-.04040	-.48740	-.04090	-.04770
GRADIENT		.00000	.00055	.00029	-.00047	-.02148	-.00050	-.00314

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 64

CALLUHAL1146(EXT)K1 H15.12V9.4 AT83AT80 T28.1

(RG0064 ( 14 NOV '75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.820  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = 3.000 RTANK = .000

RUN NO. 64/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.260	-20.000	6.37800	.47060	.13960	-.07720	.61340	-.00780	.36070
36.130	-16.000	6.37800	.47790	.10730	-.07010	.46970	-.01100	.05000
36.080	-14.000	6.37000	.47920	.11020	-.04870	.39900	-.01150	.04320
36.040	-12.000	6.37000	.47950	.11330	-.02950	.33340	-.01170	.03850
36.000	-10.000	6.37000	.47810	.11560	-.01370	.26780	-.00910	.03170
35.970	-8.000	6.38000	.47350	.11750	.00170	.20420	-.00580	.02580
35.950	-6.000	6.38000	.45750	.11830	.01410	.14740	-.00290	.01980
35.940	-4.000	6.38000	.46430	.11930	.02740	.10030	-.00080	.01400
35.940	-3.000	6.38000	.46610	.12020	.03000	.07420	.00030	.01040
35.930	-2.000	6.38000	.46660	.12010	.03300	.05010	.00130	.00690
35.930	-1.000	6.38000	.46650	.12040	.03360	.02810	.00210	.00410
35.930	.000	6.38000	.46320	.12090	.03110	.00390	.00300	.00150
35.930	1.000	6.38000	.46300	.12110	.03110	-.02050	.00450	-.00260
35.930	2.000	6.38000	.46960	.12010	.02830	-.04350	.00550	-.00590
35.940	3.000	6.38000	.46810	.12120	.02500	-.05930	.00650	-.00920
35.940	4.000	6.38000	.47010	.12050	.02010	-.09550	.00720	-.01290
35.950	6.000	6.38000	.47010	.11810	.00620	-.14670	.00940	-.01900
35.970	8.000	6.38000	.47210	.11700	-.00960	-.20150	.01250	-.02480
36.000	10.000	6.37000	.47380	.11530	-.02730	-.26370	.01500	-.03120
36.030	12.000	6.37000	.47420	.11250	-.04470	-.32870	.01700	-.03700
36.070	14.000	6.37000	.47610	.10830	-.06560	-.39210	.01680	-.04180
36.120	16.000	6.37000	.47200	.10520	-.07960	-.45970	.01520	-.04640
36.230	20.000	6.37000	.45630	.09330	-.08870	-.58250	.00940	-.05450
	GRADIENT	.00000	.00059	.00014	-.00034	-.02415	.00102	-.00331

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 65

(RG0065) ( 14 NOV 75 )

CALLUNAL1145(EXTIKI H15.12V9.4 AT93AT80 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = 0400

PARAMETRIC DATA

BETA = .000 STAB = -1.920  
ELV-18 = .000 ELV-08 = .000  
RUO-U = .000 RUO-L = .000  
ITANK = 3.000 RTANK = .000

RUN NO. 65/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
0	35.970	.0000	-4.3280	.13830	.25430	-.00340	.00270	.00060
35.940	-2.250	.0000	-.24050	.11570	.19530	-.00330	.00280	.00090
35.930	-.070	.0000	-.05640	.10690	.15750	-.00060	.00320	.00100
35.930	2.080	.0000	.12040	.10570	.12610	.00160	.00290	.00090
35.930	4.230	.0000	.29110	.11090	.09440	.00060	.00310	.00120
35.930	6.380	.0000	.46890	.12110	.03110	.00290	.00330	.00150
35.940	8.520	.0000	.64210	.13700	-.02280	.00610	.00280	.00130
35.970	10.650	.0000	.79100	.16240	-.05710	.00860	.00250	.00090
36.020	12.780	.0000	.93670	.21310	-.08240	.01520	.00170	.00120
36.110	14.890	.0000	1.05850	.26990	-.10450	.01770	.00160	.00190
36.220	16.960	.0000	1.17500	.34620	-.11480	.01950	.00160	.00170
36.340	18.950	.0000	1.23900	.41940	-.11780	.02040	.00070	.00080
36.450	20.910	.0000	1.25470	.48230	-.14890	.02230	-.00020	.00160
36.570	22.940	.0000	1.29990	.55520	-.22580	.01810	-.00040	.00240
36.680	24.960	.0000	1.32930	.62120	-.31260	.01900	-.00110	.00280
GRADIENT		.00000	.08348	.00300	-.01888	.00060	.00004	.00006

DATE 15 NOV 75

TAPULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 65

(RG0066) ( 14 NOV 75 )

CALLUHAL1146(EXT)K1 H15.11V9.4 AT83AT80 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.920  
ELEV-IB = .000 ELV-OB = .000  
JD-U = .000 RUO-L = .000  
TANK = 3.000 RTANK = .000

RUN NO. 66/ 0 RY/L = .00 GRADIENT INTERVAL = -5 / 5.00

Q	BETA	ALPHA	CL	CD	CLM	C	CLN	CSL
36.260	-20.000	6.37000	.46940	.10010	-.05110	.31190	-.00860	.06000
36.130	-16.000	6.37000	.47580	.10560	-.04910	.46790	-.01530	.04950
36.080	-14.000	6.37000	.47640	.10870	-.04150	.40030	-.01600	.04440
36.030	-12.000	6.37000	.47950	.11150	-.03740	.33600	-.01640	.03980
36.000	-10.000	6.37000	.47660	.11340	-.02510	.27220	-.01430	.03410
35.970	-8.000	6.38000	.47260	.11510	-.00760	.20980	-.00990	.02790
35.950	-6.000	6.38000	.47270	.11570	.01050	.14820	-.00570	.02060
35.940	-4.000	6.38000	.46910	.11730	.02080	.10050	-.00280	.01520
35.930	-3.000	6.38000	.46830	.11790	.02680	.07360	-.00130	.01140
35.930	-2.000	6.38000	.46720	.11830	.02960	.04940	-.00010	.00760
35.930	-1.000	6.38000	.46710	.11820	.03190	.02540	.00130	.00390
35.930	.000	6.38000	.46820	.11920	.02750	.00270	.00300	.00050
35.930	1.000	6.38000	.46840	.11860	.02780	-.02350	.00470	-.00330
35.930	2.000	6.38000	.46700	.11950	.02650	-.04600	.00600	-.00630
35.940	3.000	6.38000	.46870	.11870	.02260	-.06970	.00700	-.00970
35.940	4.000	6.38000	.46820	.11800	.01410	-.09650	.00870	-.01380
35.950	6.000	6.38000	.47260	.11660	.00230	-.14730	.01160	-.01990
35.970	8.000	6.36000	.47400	.11470	-.01500	-.20460	.01550	-.02610
36.000	10.000	6.37000	.47630	.11400	-.03450	-.26940	.01930	-.03240
36.040	12.000	6.37000	.47440	.1170	-.04750	-.33620	.02170	-.03830
36.070	14.000	6.37000	.47320	.10770	-.06200	-.39780	.02100	-.04270
36.100	16.000	6.37000	.47010	.10410	-.07370	-.45700	.01810	-.04770
36.120	18.000	6.37000	.45160	.09360	-.06990	-.58740	.00900	-.05520
36.230	20.000	6.37000	.00000	.00010	-.00083	-.02431	.00144	-.00357

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 67

(R00057) ( 14 NOV 75 )

CALLUVAL1146(EXT)KIH15.6V9.1 AT33AT80 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.920  
ELV-1B = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = 3.000 RTANK = .000

RUN NO. 67/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.230	-20.000	6.37000	.46570	.09780	-.05220	.56550	.01800	.05580
36.110	-16.000	6.37000	.47770	.10650	-.04950	.42930	.01350	.04550
36.060	-14.000	6.37000	.48140	.10970	-.04350	.35690	.01140	.04010
36.020	-12.000	6.37000	.48040	.11250	-.02990	.29350	.01080	.03560
35.990	-10.000	6.37000	.48030	.11490	-.01660	.23150	.01070	.02980
35.970	-8.000	6.38000	.47390	.11670	-.00150	.17280	.01090	.02480
35.950	-6.000	6.38000	.46770	.11710	.01820	.12280	.01020	.01810
35.940	-4.000	6.38000	.47050	.11830	.02790	.08040	.00870	.01300
35.930	-3.000	6.38000	.46560	.11790	.03350	.05940	.00730	.00970
35.930	-2.000	6.38000	.46720	.11800	.03580	.04020	.00580	.00700
35.930	-1.000	6.38000	.46390	.11760	.03540	.02220	.00420	.00380
35.930	.000	6.38000	.46730	.11830	.03460	.00000	.00290	.00070
35.930	1.000	6.38000	.46880	.11820	.03150	-.01840	.00180	-.00240
35.930	2.000	6.38000	.46710	.11810	.03150	-.03620	.00020	-.00540
35.930	3.000	6.38000	.46860	.11840	.02800	-.05500	.00140	-.00810
35.940	4.000	6.38000	.46910	.11860	.02640	-.07720	.00270	-.01080
35.950	6.000	6.38000	.46970	.11760	.01320	-.12160	.00440	-.01690
35.970	8.000	6.38000	.47090	.11620	-.00380	-.17240	.00490	-.02260
35.990	10.000	6.37000	.47610	.11510	-.02240	-.23080	.00500	-.02820
36.020	12.000	6.37000	.47210	.11130	-.03750	-.29170	.00510	-.03340
36.060	14.000	6.37000	.47100	.10800	-.05220	-.35270	.00590	-.03790
36.210	20.000	6.37000	.45590	.09270	-.07640	-.54810	.01610	-.05210
GRADIENT	.00000	.00000	.00013	.00006	-.00058	-.01945	-.00142	-.00299

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 68

(RG0068) ( 14 NOV 75 )

CALLUMAL1146(EXT)K1H:5.1V9.1 AT83AT80 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XPRP = 1339.9100 IN. XC  
YPRP = .0000 IN. YC  
ZPRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.920  
ELV-1B = .000 ELV-0B = .000  
RUD-U = .000 RUD-L = .000  
ITANK = 3.000 RTANK = .000

RUN NO. 68/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
35.210	-20.000	6.37000	.47080	.09760	-.07940	.54660	.03370	.05630
36.100	-16.000	6.37000	.48060	.10680	-.06900	.40260	.03100	.04560
36.050	-14.000	6.37000	.48280	.11100	-.05280	.33260	.02830	.04030
36.020	-12.000	6.37000	.48210	.11400	-.03260	.27110	.02610	.03470
35.980	-10.000	6.38000	.47630	.11490	-.01400	.20690	.02450	.02890
35.960	-8.000	6.38000	.47310	.11600	.00470	.15560	.02210	.02310
35.950	-6.000	6.38000	.46950	.11690	.01890	.10980	.01900	.01850
35.930	-4.000	6.38000	.46440	.11830	.03030	.07320	.01410	.01290
35.930	-3.000	6.38000	.46240	.11650	.03680	.05340	.01120	.00950
35.930	-2.000	6.38000	.46520	.11650	.03960	.03580	.00820	.00680
35.930	-1.000	6.38000	.46650	.11650	.04010	.01900	.00500	.00450
35.930	.000	6.38000	.46320	.11640	.03610	.00430	.00210	.00100
35.930	1.000	6.38000	.45440	.11650	.03730	-.01380	-.00060	-.00150
35.930	2.000	6.38000	.46750	.11660	.03510	-.02710	-.00490	-.00490
35.930	3.000	6.38000	.46490	.11750	.03320	-.04700	-.00720	-.00730
35.940	4.000	6.38000	.46920	.11750	.02880	-.06630	-.01020	-.01040
35.940	6.000	6.38000	.47090	.11650	-.00010	-.10320	-.01480	-.01540
35.960	7.900	6.38000	.47310	.11600	-.00010	-.14850	-.01810	-.02170
35.980	10.000	6.39000	.47520	.11500	-.02350	-.20480	-.02010	-.02730
36.010	12.000	6.37000	.47400	.11160	-.04280	-.26640	-.02140	-.03240
36.040	14.000	6.37000	.47410	.10750	-.06300	-.32470	-.02320	-.03680
36.080	16.000	6.37000	.47230	.10400	-.07750	-.38770	-.02500	-.04140
36.180	20.000	6.37000	.45540	.08890	-.09480	-.50990	-.03160	-.05020
	GRADIENT	.00000	.00049	.00014	-.00044	-.01696	-.00304	-.00288

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 69

CA11UHAL1146(EXT)KIH15.1

AT83AT80 T28.1

(RG0069) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.920  
ELV-IB = .000 ELV-OB = .000  
ITANK = 3.000 RTANK = .000

RUN NO. 69/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.170	-20.000	6.37000	.46880	.10230	-.05990	.46500	.07520	.05080
36.070	-16.000	6.37000	.47610	.10960	-.05510	.34320	.05940	.04100
35.030	-14.000	6.37000	.47930	.11230	-.03970	.28420	.05150	.03600
36.000	-12.000	6.37000	.47810	.11490	-.02160	.23160	.04500	.03190
35.980	-10.000	6.38000	.47550	.11620	-.00270	.17830	.03870	.02730
35.960	-8.000	6.38000	.47010	.11700	.01560	.13490	.03230	.02250
35.940	-6.000	6.38000	.46370	.11640	.03450	.09380	.02500	.01680
35.930	-4.000	6.38000	.46280	.11640	.04610	.06370	.01770	.01210
35.930	-3.000	6.38000	.45960	.11610	.05050	.04810	.01340	.00930
35.930	-2.000	6.38000	.45960	.11560	.05210	.03550	.00970	.00690
35.920	-1.000	6.38000	.46080	.11520	.05360	.01630	.00510	.00400
35.920	.000	6.38000	.46070	.11570	.05160	.00570	.00110	.00150
35.920	1.000	6.38000	.46200	.11580	.05280	-.00770	-.00340	-.00140
35.930	2.000	6.38000	.46230	.11620	.04990	-.01980	-.00720	-.00400
35.930	3.000	6.38000	.46380	.11680	.04740	-.03690	-.01190	-.00710
35.930	4.000	6.38000	.46370	.11700	.04530	-.05160	-.01580	-.00880
35.940	6.000	6.38000	.46860	.11720	.03210	-.08580	-.02430	-.01440
35.950	8.000	6.38000	.47180	.11700	.01350	-.12520	-.03190	-.01990
35.970	10.000	6.38000	.47240	.11640	-.00760	-.17230	-.03920	-.02430
36.000	12.000	6.37000	.47240	.11390	-.02790	-.21750	-.04490	-.02800
36.020	14.000	6.37000	.47610	.11090	-.04840	-.27090	-.05260	-.03340
36.060	16.000	6.37000	.46870	.10690	-.05830	-.32230	-.06040	-.03680
36.140	20.000	6.37000	.45080	.09530	-.07260	-.43060	-.07710	-.04480
	GRADIENT	.00000	.00038	.00010	-.00029	-.01421	-.00420	-.00267

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 70

(R00070) ( 14 NOV 75 )

CALLUHAL1146(EXT)KI V9.1 ATB3AT80 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 RUD-U = .000  
RUD-L = .000 ITANK = 3.000  
RTANK = .000

RUN NO. 70/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
35.960	-4.440	.00000	-.36230	.13130	.00180	-.00320	.00240	.00110
35.930	-2.270	.00000	-.19700	.11130	.01140	-.00230	.00210	.00130
35.920	-.080	.00000	-.02470	.10270	.02480	-.00130	.00230	.00170
35.920	2.070	.00000	.13540	.10100	.04220	.00150	.00250	.00170
35.920	4.210	.00000	.28600	.10480	.06140	.00090	.00270	.00190
35.920	6.360	.00000	.44240	.11340	.07780	.00340	.00250	.00110
35.930	8.500	.00000	.59760	.12600	.09620	.00580	.00210	.00140
35.950	10.640	.00000	.73440	.14860	.12520	.00880	.00150	.00190
36.000	12.760	.00000	.86720	.18930	.15560	.01610	.00070	.00140
36.080	14.880	.00000	.97710	.24660	.17480	.01750	.00030	.00240
36.180	16.940	.00000	1.06660	.31420	.20700	.01910	.00060	.00290
36.300	18.950	.00000	1.13900	.33690	.23660	.02070	.00050	.00170
36.400	20.910	.00000	1.13800	.44460	.26020	.01930	.00050	.00220
36.510	22.960	.00000	1.15810	.50670	.27190	.01730	.00030	.00300
36.600	24.990	.00000	1.16440	.55840	.27650	.01340	.00150	.00320
GRADIENT		.00000	.07528	-.00293	.00693	.00055	.00005	.00009

REFERENCE DATA      PARAMETRIC DATA

SREF = 5500.0000 SQ.FT.      XHRP = 1339.9100 IN. XC      BETA = .000      RUD-U = .000  
 LREF = 327.7800 IN.      YMRP = .0000 IN. YC      RUD-L = .000      ITANK = .000  
 BREF = 2348.0000 IN.      ZMRP = 190.7500 IN. ZC      RTANK = .000  
 CALE = .0400

Q	ALPHAM	BETA	CL	CD	CLM	CY	CLN	CSL
35.980	-4.450	.00000	-.36400	.14030	-.01160	-.00610	.00250	.00010
35.950	-2.270	.00000	-.19880	.11940	.00220	-.00520	.00200	.00080
35.940	-.090	.00000	-.03230	.11070	.00330	-.00400	.00230	.00160
35.940	2.050	.00000	.13220	.10890	.03010	-.00370	.00220	.00050
35.940	4.210	.00000	.28190	.11300	.05040	-.00200	.00170	.00100
35.940	6.360	.00000	.44490	.12100	.07490	-.00180	.00200	.00020
35.940	8.500	.00000	.59300	.13300	.09910	.00050	.00180	.00110
35.960	10.630	.00000	.73010	.15540	.13290	.00400	.00090	.00140
36.010	12.760	.00000	.85900	.19570	.16800	.00730	.00010	.00190
36.100	14.880	.00000	.97550	.25500	.18710	.01100	.00020	.00250
36.200	16.940	.00000	1.07470	.32550	.21830	.01230	.00030	.00260
36.310	18.950	.00000	1.14110	.39550	.24980	.01330	.00020	.00140
36.420	20.910	.00000	1.13720	.45420	.27210	.01230	.00070	.00150
36.520	22.950	.00000	1.14860	.51040	.28720	.01510	.00080	.00310
36.590	24.990	.00000	1.11310	.56140	.29420	.01570	.00070	.00370
36.510	GRADIENT	.00000	.07496	-.00301	.00701	.00045	-.00005	.00007

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TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 72

( RG0073 ) ( 14 NOV 75 )

AT70AT71 T28.1

CALL UNAL1146/EXT/KIM15.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.930  
ELV-18 = .000 ELV-08 = .000  
ITANK = .000 RTANK = .000

RUN NO. 73/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CO	CLM	CY	CLN	CSL
36.150	-20.000	6.37000	.46800	.12040	-.09920	.37940	.04820	.06130
36.050	-16.000	6.37000	.48350	.12580	-.08420	.27070	.04080	.04900
36.030	-14.000	6.37000	.48310	.12730	-.06430	.22110	.03790	.04280
36.010	-12.000	6.37000	.48190	.12800	-.04420	.18020	.03520	.03670
35.980	-10.000	6.38000	.47560	.12670	-.02530	.13480	.03040	.02870
35.970	-8.000	6.39000	.47140	.12720	-.01030	.10450	.02600	.0210
35.960	-6.000	6.38000	.46380	.12670	.00920	.07340	.01990	.01820
35.950	-4.000	6.38000	.46380	.12680	.02240	.04920	.01420	.01280
35.950	-3.000	6.38000	.45940	.12550	.02680	.03580	.01060	.00980
35.940	-2.000	6.38000	.46380	.12520	.02580	.02560	.00750	.00730
35.940	-1.000	6.38000	.46310	.12410	.02500	.01280	.00450	.00350
35.940	.000	6.38000	.46370	.12370	.02330	-.03130	.00010	.00090
35.940	1.000	6.38000	.45930	.12440	.02360	-.01190	-.00350	-.00190
35.940	2.000	6.38000	.46210	.12190	.02450	-.02180	-.00620	-.00450
35.940	3.000	6.38000	.45950	.12540	.02150	-.03430	-.01020	-.00770
35.950	4.000	6.38000	.46670	.12720	.01770	-.04540	-.01370	-.01060
35.960	6.000	6.38000	.46910	.12730	.00450	-.07040	-.02050	-.01610
35.970	8.000	6.38000	.47120	.12660	-.00990	-.10140	-.02650	-.02210
35.980	10.000	6.38000	.47470	.12660	-.02460	-.13720	-.03150	-.02770
36.000	12.000	6.37000	.47380	.12530	-.03990	-.17580	-.03500	-.03360
36.020	14.000	6.37000	.47660	.12350	-.06040	-.21690	-.03840	-.04050
36.050	16.000	6.37000	.47940	.12220	-.08210	-.26070	-.04260	-.04610
36.130	20.000	6.37000	.44860	.11510	-.09460	-.35520	-.05050	-.05550
GRADIENT		.00000	.00006	.00002	-.00065	-.01180	-.00350	-.00292

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 73

CALLUMAL1146(EXT)KIM15.1

ATT00AT7) T28.1

(RG0074) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHA = 2.080 STAB = -1 930  
 ELV-IB = .000  
 ITANK = .000 RANK = .000

RUN NO. 74/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
0	2.08000	.16130	.10210	-.04260	.37090	.04970	.04480
36.130	2.08000	.16140	.10760	-.01250	.27140	.04210	.03620
36.050	2.08000	.15350	.11030	.01770	.22140	.03980	.03110
36.020	2.08000	.14510	.11140	.03540	.18160	.03550	.02490
36.000	2.08000	.13830	.11090	.05210	.14180	.03130	.02130
35.980	2.08000	.13240	.11220	.06410	.10550	.02600	.01640
35.960	2.08000	.12880	.11280	.07400	.07620	.02050	.01220
35.950	2.08000	.12370	.11270	.08270	.05020	.01450	.00830
35.940	2.08000	.11920	.11200	.08590	.03620	.01100	.00720
35.940	2.08000	.11720	.11170	.08920	.02420	.00780	.00540
35.940	2.08000	.11590	.11050	.08770	.01200	.00420	.00330
35.940	2.08000	.11560	.10970	.09090	-.00050	.00080	.00120
35.940	2.08000	.11740	.11020	.08810	-.01260	-.00310	-.00110
35.940	2.08000	.11710	.11080	.08390	-.02600	-.00680	-.00220
35.940	2.08000	.11900	.11150	.08210	-.03890	-.01000	-.00410
35.940	2.08000	.12050	.11200	.07750	-.05110	-.01320	-.00650
35.950	2.08000	.12640	.11270	.06660	-.07860	-.02010	-.00980
35.960	2.08000	.12950	.11150	.06210	-.10680	-.02600	-.01410
35.980	2.08000	.13130	.11140	.05400	-.14250	-.03100	-.01940
36.000	2.08000	.13220	.11040	.04320	-.18290	-.03480	-.02450
36.020	2.08000	.13680	.10750	.02370	-.22540	-.03850	-.02890
36.050	2.08000	.14290	.10500	-.00140	-.26870	-.04260	-.03290
36.120	2.08000	.14050	.09990	-.02330	-.36180	-.05070	-.04140
GRADIENT	-.00000	-.00020	-.00011	-.00071	-.01259	-.00350	-.00188

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TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 74

( R00075 ) ( 14 NOV 75 )

CA11UHAL1146(EXT)KIH15.1 AT70AT71 728.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XPRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YPRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZPRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHA = 12.790 STAB = -1.930  
 ELV-18 = .000 ELV-08 = .000  
 ITANK = .000 RTANK = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.250	-20.000	12.78000	.86860	.20200	-.16050	.40440	.04220	.07520
36.160	-16.000	12.78000	.90970	.21290	-.16750	.28940	.03720	.05850
36.130	-14.000	12.78000	.91210	.21300	-.14300	.23640	.03470	.05040
36.100	-12.000	12.78000	.92250	.21540	-.11730	.19210	.03180	.04210
36.070	-10.000	12.78000	.91840	.21250	-.09620	.14980	.02780	.03450
36.060	-8.000	12.78000	.92490	.21270	-.08440	.11560	.02360	.02750
36.040	-6.000	12.78000	.92350	.21150	-.07220	.08320	.01770	.02050
36.030	-4.000	12.78000	.92740	.21180	-.05510	.05730	.01210	.01430
36.030	-3.000	12.78000	.92840	.21120	-.06150	.04290	.00980	.01070
36.030	-2.000	12.78000	.92340	.21010	-.05650	.03130	.00580	.00810
36.030	-1.000	12.78000	.92840	.20970	-.05000	.02070	.00280	.00440
36.030	.000	12.78000	.92810	.20950	-.05060	.00920	.00030	.00110
36.030	1.000	12.78000	.92900	.20990	-.05270	-.00210	.00450	.00210
36.030	2.000	12.78000	.93340	.21020	-.05690	-.01220	.00760	.00600
36.030	3.000	12.78000	.93060	.20990	-.06170	-.02340	.01070	.00860
36.030	4.000	12.78000	.93580	.21060	-.06930	-.03760	.01410	.01200
36.040	6.000	12.78000	.93310	.21020	-.07890	-.06310	.02030	.01940
36.050	8.000	12.78000	.92840	.20950	-.08570	-.09560	.02590	.02600
36.060	10.000	12.78000	.92330	.20900	-.09770	-.13370	.03040	.03400
36.080	12.000	12.78000	.92180	.20900	-.11470	-.17490	.03420	.04200
36.110	14.000	12.78000	.91040	.20640	-.13680	-.21970	.03750	.04950
36.130	16.000	12.78000	.89930	.20290	-.16180	-.26420	.04080	.05680
36.220	20.000	12.78000	.85250	.19430	-.14520	-.37440	.04510	.07110
	GRADIENT	.00000	.00101	-.00014	-.00035	-.01147	-.00329	-.00330

(RG0077) ( 14 NOV 75 )

CALLUNAL1146(EXT)KIM15.7V9.4 AT70AT71 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHA = 2.080 STAB = -1.930  
 ELV-IB = .000 ELV-OB = .000  
 RUD-U = .000 RUD-L = .000  
 ITANK = .000 RTANK = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.230	-20.000	2.08000	.14430	.09080	-.00670	.56250	-.05160	.06620
36.120	-16.000	2.08000	.15710	.09600	-.01200	.43610	-.04440	.05480
36.070	-14.000	2.08000	.14940	.09910	.01130	.36600	-.03630	.04690
36.030	-11.900	2.08000	.14260	.10260	.03190	.30230	-.02890	.03920
35.990	-10.000	2.08000	.13550	.10420	.04460	.24040	-.02070	.03180
35.970	-8.000	2.08000	.13100	.10790	.05470	.18540	-.01460	.02470
35.960	-6.000	2.08000	.12680	.11090	.06350	.13440	-.00870	.01840
35.950	-4.000	2.08000	.12300	.11290	.07240	.08510	-.00330	.01220
35.950	-3.000	2.08000	.12450	.11300	.07750	.06330	-.00190	.00950
35.940	-2.000	2.08000	.11990	.11230	.08100	.03950	-.00060	.00660
35.940	-1.000	2.08000	.12110	.11160	.08060	.01910	.00060	.00390
35.940	.000	2.08000	.11960	.11130	.08030	-.00550	.00280	.00010
35.940	1.000	2.08000	.11920	.11130	.07810	-.02990	.00530	-.00280
35.940	2.000	2.08000	.12320	.11190	.07620	-.05170	.00660	-.00520
35.940	2.900	2.08000	.12210	.11230	.07180	-.07060	.00750	-.00890
35.950	4.000	2.08000	.12480	.11220	.06610	-.09640	.00970	-.01170
35.960	6.000	2.08000	.12710	.11040	.05370	-.14440	.01550	-.01730
35.980	8.000	2.08000	.12900	.10710	.04350	-.19800	.02220	-.02400
36.000	10.000	2.08000	.13220	.10370	.03630	-.25420	.02930	-.03170
36.030	12.000	2.08000	.13630	.10130	.02490	-.31680	.03670	-.03940
36.070	14.000	2.08000	.14020	.09770	.01120	-.37620	.04230	-.04620
36.120	16.000	2.08000	.13910	.09480	.00050	-.44170	.04860	-.05270
36.200	20.000	2.08000	.12020	.08860	.01700	-.56710	.05530	-.05350
36.230	GRADIENT	-.00000	.00008	-.00010	-.00091	-.02277	.00166	-.00303

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TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

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(RG0078) ( 14 NOV 75 )

CALL UNAL1146(EXT)K1H15.7V9.4 AT70AT71 T28.1

REFERENCE DATA

SREF = 5500.00J0 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 UREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHAM = 6.380 STAB = -1.930  
 ELV-18 = .000 ELV-08 = .000  
 RUO-U = .000 RUO-L = .000  
 ITANK = .000 RTANK = .000

RUN NO. 78/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
35.250	-20.000	6.37000	.44890	.10880	-.03410	.56480	-.05020	.07210
36.120	-16.000	6.37000	.47900	.11400	-.06170	.43030	-.04330	.05940
36.080	-14.000	6.37000	.48520	.11740	-.06260	.36580	-.03650	.05300
36.030	-12.000	6.37000	.48690	.11950	-.05740	.29840	-.02840	.04420
36.000	-10.000	6.37000	.48050	.12100	-.04550	.23680	-.02070	.03600
35.980	-8.000	6.38000	.47750	.12390	-.02860	.18450	-.01450	.02660
35.960	-5.000	6.38000	.47720	.12620	-.01060	.12940	-.00770	.02100
35.950	-4.000	6.38000	.47070	.12730	-.00160	.08200	-.00230	.01450
35.950	-3.000	6.38000	.47090	.12720	.00280	.06060	-.00140	.01120
35.950	-2.000	6.38000	.47270	.12700	.00210	.03970	-.00040	.00740
35.940	-1.000	6.38000	.47010	.12590	-.00150	.00180	.00030	.00450
35.940	.000	6.38000	.47000	.12590	-.00170	-.00180	.00250	.00080
35.940	1.000	6.38000	.47170	.12650	-.00100	-.02500	.00500	-.00330
35.950	2.000	6.38000	.47450	.12740	-.00070	-.04420	.00540	-.00670
35.950	3.000	6.38000	.47730	.12740	-.00440	-.08430	.00600	-.01030
35.950	4.000	6.38000	.47640	.12750	-.00930	-.08690	.00770	-.01330
35.960	6.000	6.38000	.47540	.12510	-.02330	-.13330	.01350	-.02050
35.980	8.100	6.38000	.47520	.12330	-.03580	-.19070	.02080	-.02790
36.000	10.000	6.37000	.47890	.12090	-.04680	-.24260	.02690	-.03530
36.030	12.000	6.37000	.47930	.11820	-.05620	-.30400	.03460	-.04320
36.070	14.000	6.37000	.47240	.11480	-.05410	-.36590	.04130	-.04980
36.100	16.000	6.37000	.46260	.11300	-.04890	-.43040	.04660	-.05640
36.120	20.000	6.37000	.42590	.10520	-.03270	-.55430	.05120	-.06710
36.230	GRADIENT	.00000	.00062	.00005	-.00096	-.02103	.00131	-.00353

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

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(RG0079) ( 14 NOV 75 )

ATT07AT71 T28.1

CALLUMAL1146(EXT)KIH15.7V9.4

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHA = 12.790 STAB = -1.930  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.340	-20.000	12.78000	.86210	.19140	-.13810	.58170	-.04870	.07570
36.220	-16.000	12.78000	.91130	.20460	-.17410	.43960	-.03970	.05880
36.170	-14.000	12.78000	.92440	.20760	-.16610	.37030	-.03250	.05090
36.130	-12.000	12.78000	.93050	.20860	-.14870	.30170	-.02500	.04290
36.090	-10.000	12.78000	.92890	.20860	-.13570	.23520	-.01710	.03400
36.070	-8.000	12.78000	.93850	.21110	-.12470	.18610	-.01220	.02750
36.050	-6.000	12.78000	.93610	.21190	-.11170	.13560	-.00690	.02040
36.040	-4.000	12.78000	.93730	.21380	-.09580	.08950	-.00350	.01350
36.040	-3.000	12.78000	.93920	.21440	-.09490	.06750	-.00250	.01010
36.040	-2.000	12.78000	.94190	.21330	-.09170	.04710	-.00160	.00700
36.030	-1.000	12.78000	.93940	.21380	-.08810	.02930	-.00100	.00440
36.030	.000	12.78000	.94030	.21420	-.08520	.00810	.00060	.00090
36.030	1.000	12.78000	.94580	.21490	-.08810	-.01500	.00220	-.00230
36.030	2.000	12.78000	.94190	.21430	-.09110	-.03230	.00240	-.00600
36.040	3.000	12.78000	.94210	.21350	-.09740	-.05140	.00320	-.00890
36.040	4.000	12.78000	.94600	.21400	-.10440	-.07150	.00430	-.01190
36.050	6.000	12.78000	.94240	.21130	-.11780	-.11680	.00870	-.01840
36.060	8.000	12.78000	.93930	.20840	-.12410	-.17400	.01550	-.02590
36.080	10.000	12.78000	.93440	.20590	-.13590	-.23050	.02190	-.03410
36.120	12.000	12.78000	.92840	.20390	-.14900	-.29250	.02910	-.04290
36.160	14.000	12.78000	.91880	.20100	-.16030	-.35940	.03570	-.05030
36.200	16.000	12.78000	.90590	.19710	-.16720	-.42820	.04240	-.05820
36.320	20.000	12.78000	.85670	.18650	-.13450	-.55750	.04780	-.07300
GRADIENT	.00000	.00000	.00083	-.00005	-.00041	-.02008	.00099	-.00319

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 78

(RG0080) ( 14 NOV 75 )

CALLUMAL1146(EXT)KIH15.7V9.4 A770AT71 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = -1.930  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 80/ 0 RN/L = 00 GRADIENT INTERVAL = -5 / 5.00

Q	ALPHAM	BETA	CL	CD	CLM	CY	CLN	CSL
35.980	-4.440	.0000	-42610	.14380	.20610	-.00940	.30360	.00050
35.950	-2.250	.0000	-24150	.12190	.15770	-.00900	.00350	.00020
35.940	-.070	.0000	-.05480	.11290	.11550	-.00680	.00330	.00090
35.940	2.080	.0000	.12850	.11170	.08210	-.00630	.00340	.00120
35.940	4.230	.0000	.30170	.11610	.04170	-.00370	.00280	.00080
35.940	6.380	.0000	.48100	.12740	-.00240	-.00260	.00290	.00030
35.950	8.520	.0000	.65140	.14250	-.04520	.00020	.00250	.00090
35.980	10.650	.0000	.79840	.16880	-.06720	.00470	.00130	.00120
36.030	12.780	.0000	.93770	.21420	-.08600	.00790	.00030	.00150
36.120	14.890	.0000	1.06950	.27900	-.10500	.01100	-.00010	.00190
36.230	16.960	.0000	1.17470	.35400	-.10980	.01210	-.00050	.00200
36.350	18.950	.0000	1.23870	.42490	-.12000	.01260	-.00030	.00060
36.460	20.910	.0000	1.25300	.49080	-.14440	.01570	-.00070	.00110
36.580	22.940	.0000	1.29210	.56070	-.22110	.01550	-.00030	.00250
36.700	24.960	.0000	1.32390	.62730	-.33490	.01640	-.00040	.00300
	GRADIENT	.00000	.08425	-.00304	-.01867	.00065	-.00008	.00007

REFERENCE DATA

SREF = 5500.0000 SQ.FT.      XMRP = 1339.9100 IN. XC      ALPHA = 2.080      STAB = -1.930  
 LREF = 27.7800 IN.      YMRP = .0000 IN. YC      ELV-IB = .000      ELV-OB = .000  
 BREF = 248.0000 IN.      ZMRP = 190.7500 IN. ZC      RUD-U = 25.000      RUD-L = 25.000  
 SCALE = .0400      ITANK = .000      RTANK = .000

PARAMETRIC DATA

RUN NO.    81/ 0    RN/L = .00    GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
35.280	-20.000	2.08000	.14670	.09740	.03010	.62210	-.08110	.07320
35.150	-16.000	2.08000	.14630	.10090	.02250	.49720	-.07510	.06100
36.100	-14.000	2.08000	.15260	.10430	.03680	.43050	-.06880	.05510
36.060	-12.000	2.08000	.14330	.10620	.05150	.36580	-.06130	.04740
36.020	-10.000	2.08000	.13970	.10880	.05930	.30350	-.05300	.03980
36.000	-8.000	2.08000	.13420	.11270	.07110	.24390	-.04530	.03180
35.980	-6.000	2.08000	.13290	.11560	.07720	.19280	-.03870	.02610
35.960	-4.000	2.08000	.12550	.11710	.09530	.13840	-.03090	.01890
35.930	-3.000	2.08000	.12540	.11740	.08310	.11430	-.02810	.01570
35.150	-2.000	2.08000	.12400	.11680	.09010	.09450	-.02760	.01270
35.950	-1.000	2.08000	.12410	.11673	.08840	.07750	-.02890	.01100
35.950	.000	2.08000	.12580	.11750	.08820	.03960	-.02910	.00840
35.950	1.000	2.08000	.12580	.11740	.08520	.03570	-.02660	.00550
35.950	2.000	2.08000	.12820	.11710	.08210	.00730	-.02250	.00180
35.950	3.000	2.08000	.17310	.11790	.07840	-.01910	-.01930	-.00160
35.950	4.000	2.08000	.14330	.11770	.07230	-.04760	-.01630	-.00510
35.960	6.000	2.08000	.13840	.11670	.06610	-.08640	-.01490	-.01100
35.970	8.000	2.08000	.14130	.11360	.05560	-.13970	-.00300	-.01720
35.990	10.000	2.08000	.13910	.11110	.04980	-.19520	-.00300	-.02390
36.020	12.000	2.08000	.14170	.10200	.04090	-.25030	.00170	-.03100
36.030	14.000	2.08000	.14550	.10590	.03830	-.31050	.00600	-.03800
36.090	16.000	2.08000	.13900	.10270	.02980	-.36940	.01210	-.04340
36.200	20.000	2.08000	.12890	.09750	.04080	-.49790	.01910	-.05420
	GRADIENT	.00000	.00799	.00009	-.00167	-.02241	.00158	-.00293

ORIGINAL PAGE IS  
OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CARI ( UHALL146 )

PAGE 80

(R00082) ( 14 NOV 75 )

REFERENCE DATA

CREF = 5500.000 SC.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = 0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.930  
ELV-IB = .700 ELV-OB = .000  
RUD-U = 25.000 RUD-L = 25.000  
ITANK = .000 RTANK = .000

RUN NO. 82/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CU	CLM	CY	CLN	CSL
36.290	-20.000	6.37000	.44610	.11450	-.00390	.62310	-.07990	.07630
36.170	-16.000	6.37000	.47810	.12090	-.04010	.49750	-.07660	.06410
36.110	-14.000	6.37000	.48610	.12650	-.04140	.43310	-.07070	.05700
36.070	-12.000	6.37000	.48800	.12420	-.07700	.36510	-.06300	.04920
36.030	-10.000	6.37000	.48340	.12440	-.02630	.29480	-.05210	.04710
36.000	-8.000	6.37000	.48070	.12840	-.01290	.24750	-.04530	.03270
35.980	-6.000	6.38000	.47770	.13030	.00090	.18980	-.03850	.02610
35.970	-4.000	6.38000	.47780	.13200	.00870	.13660	-.03080	.01930
35.960	-3.000	6.38000	.47610	.13230	.01000	.11560	-.02970	.01560
35.960	-2.000	6.38000	.47950	.13250	.00710	.09500	-.02790	.01220
35.950	-1.000	6.38000	.47720	.13190	.00370	.07570	-.02820	.00920
35.950	.000	6.38000	.47750	.13280	.00650	.05940	-.02950	.00590
35.950	1.000	6.38000	.47860	.13230	.00580	.03390	-.02610	.00160
35.950	2.000	6.38000	.47910	.13230	.00590	.00860	-.02230	-.00200
35.950	3.000	6.38000	.48080	.13280	.00440	-.01410	-.01990	-.00560
35.960	4.000	6.38000	.48070	.13240	.00240	-.03740	-.01790	-.00850
35.970	6.000	6.38000	.48220	.13230	-.01960	-.08080	-.01520	-.01600
35.980	8.000	6.38000	.48440	.13000	-.02500	-.12630	-.01040	-.02300
36.000	10.000	6.37000	.48610	.12850	-.03180	-.18410	-.00460	-.03110
36.020	12.000	6.37000	.48150	.12560	-.03760	-.24120	.00070	-.03750
36.050	14.000	6.37000	.47410	.12310	-.03410	-.29850	.00530	-.04380
36.100	16.000	6.37000	.47090	.12140	-.03490	-.36210	.01100	-.05030
36.200	20.000	6.37000	.44180	.11260	-.02640	-.47830	.01490	-.06220
GRADIENT		.00000	.00044	.00005	-.00102	-.02166	.00152	-.00351

REFERENCE DATA

SREF = 5500.0000 SQ.FT.

LREF = 327.7900 IN.

BREF = 2348.0000 IN.

SCALE = .0400

XMPP = 1339.9100 IN. XC

YMRP = .0000 IN. YC

ZMRP = 190.7500 IN. ZC

ALPHA = 12.790

ELV-18 = .000

RUD-U = 25.000

ITANK = .000

STAB = -1.930

ELV-08 = .000

RUD-L = 25.000

RTANK = .000

PARAMETRIC DATA

RUN NO.	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
83/ 0	0	0	RN/L = .00	GRADIENT INTERVAL = -5.00/ 5.00				
36.390	-20.000	12.77000	.85900	.19910	-.10750	.54520	-.08030	.07630
36.260	-16.000	12.78000	.90430	.20980	-.14440	.50620	-.07360	.05950
36.210	-14.000	12.78000	.91680	.21170	-.14290	.43490	-.06720	.05130
36.160	-12.000	12.78000	.92610	.21330	-.13360	.35920	-.06010	.04330
36.120	-10.000	12.78000	.93220	.21280	-.12800	.30250	-.05060	.03530
36.090	-8.000	12.78000	.93930	.21450	-.11890	.24390	-.04240	.02710
36.070	-6.000	12.78000	.93470	.21540	-.10780	.19040	-.03670	.02060
36.060	-4.000	12.78000	.93650	.21770	-.09450	.14580	-.03250	.01380
36.050	-3.000	12.78000	.93730	.21810	-.08750	.12400	-.03060	.01060
36.050	-2.000	12.78000	.94040	.21910	-.08250	.10420	-.03000	.00810
36.040	-1.000	12.78000	.93850	.21950	-.07460	.08630	-.03010	.00510
36.040	1.000	12.78000	.94220	.21950	-.07470	.04600	-.02910	.00140
36.040	2.000	12.78000	.94420	.21980	-.07790	.02450	-.02610	-.00460
36.040	3.000	12.78000	.94290	.21890	-.08270	.03210	-.02460	-.00810
36.040	4.000	12.78000	.94520	.21910	-.03100	.01930	-.02280	-.01140
36.050	6.000	12.78000	.94170	.21690	-.10030	-.06500	-.01930	-.01850
36.060	8.000	12.78000	.94050	.21550	-.10650	-.11980	-.01350	-.02530
36.080	10.000	12.78000	.93640	.21290	-.11800	-.17460	-.00790	-.03300
36.100	12.000	12.78000	.92800	.21050	-.13490	-.23000	-.00310	-.04120
36.140	14.000	12.78000	.92100	.20830	-.14550	-.29410	.00260	-.04960
36.180	15.000	12.78000	.90700	.20530	-.15770	-.35770	.00740	-.05710
36.280	20.000	12.78000	.85570	.19320	-.12640	-.48770	.01160	-.07180
	GRADIENT	.00000	.00104	.00017	.00064	-.02043	.00110	-.00315

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAP.1146 )

PAGE 82

(RG0084) ( 14 NOV 75 )

CALLUMAL1146(EXT)K1H15.7V9.4 AT70AT71 128.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.930  
 ELV-1B = .000 ELV-OB = .000  
 RUD-U = 25.000 RUD-L = .000  
 ITANK = .000 RTANK = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	C <sub>Y</sub>	CSL
35.280	-20.000	6.37000	.44940	.11310	.02150	.50290	-.07010	.07580
35.150	-16.000	6.37000	.47360	.11740	-.05130	.47500	-.06600	.06340
35.100	-14.000	6.37000	.48740	.12060	-.05630	.41050	-.06010	.05690
35.050	-12.000	6.37000	.48570	.12180	-.05130	.34350	-.05180	.04890
35.020	-10.000	6.37000	.48110	.12320	-.03880	.27620	-.04190	.04030
35.990	-8.000	6.37000	.47900	.12620	-.02080	.22340	-.03500	.03270
35.980	-6.000	6.38000	.47410	.12830	-.00550	.16740	-.02780	.02530
35.960	-4.000	6.38000	.47380	.13040	.00210	.11720	-.02030	.01820
35.960	-3.000	6.38000	.47120	.12990	.00530	.09490	-.01840	.01490
35.950	-2.000	6.38000	.47210	.12930	.00530	.07200	-.01750	.01150
35.950	-1.000	6.38000	.47480	.12930	.00610	.05410	-.01780	.00850
35.950	.000	6.38000	.47220	.12990	.00470	.03420	-.01640	.00520
35.950	1.000	6.38000	.47550	.12990	.00790	.00920	-.01350	.00060
35.950	2.000	6.38000	.47260	.13000	.00720	-.01340	-.01130	-.00310
35.950	3.000	6.38000	.47330	.13020	.00310	-.03530	-.00920	-.00660
35.960	4.000	6.38000	.47320	.12980	-.00190	-.05750	-.00740	-.00970
35.970	6.000	6.38000	.47730	.12990	-.00950	-.10260	-.00420	-.01690
35.980	8.000	6.38000	.48160	.12770	-.02410	-.15290	.00150	-.02400
36.000	10.000	6.37000	.47730	.12470	-.03860	-.20970	.00770	-.03120
36.030	12.000	6.37000	.47430	.12210	-.03940	-.26640	.01410	-.03820
36.060	14.000	6.37000	.47180	.11910	-.03680	-.32950	.02030	-.04560
36.110	16.000	6.37000	.46310	.11640	-.03610	-.39030	.02600	-.05190
36.220	20.000	6.37000	.43230	.11010	-.02500	-.51570	.03020	-.06310
	GRADIENT	.00000	.00009	-.00070	-.00028	-.02378	.00160	-.00355

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 83

(RG0085) ( 14 NOV 75 )

CALLUVAL1146(EXT)KIH15.7V9.4 AT70AT71 T28.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 339.9100 IN. XC  
LREF = 327.7900 IN. YMRP = .0000 IN. YC  
SREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0490

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.930  
ELV-IB = .009 ELV-OC = .000  
RUD-U = .009 RUD-L = 25.000  
ITANK = .009 RTANK = .000

RUN NO. 85/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.270	-20.000	6.37000	.44930	.11200	-.02220	.59600	-.06470	.07340
36.150	-16.000	6.37000	.47630	.11720	-.04710	.46510	-.05900	.06090
36.090	-14.000	6.37000	.48510	.11990	-.05430	.39770	-.05300	.05370
36.050	-12.000	6.37000	.48210	.12110	-.04630	.33110	-.04440	.04560
36.010	-10.000	6.37000	.47820	.12280	-.03680	.26870	-.03590	.03750
35.990	-8.000	6.37000	.47550	.12530	-.02220	.21340	-.02930	.03030
35.970	-6.000	6.38000	.47150	.12810	-.00860	.16060	-.02250	.02350
35.960	-4.000	6.38000	.47310	.12980	.00180	.10930	-.01570	.01620
35.940	-3.000	6.38000	.47270	.12960	.00380	.08530	-.01360	.01220
35.950	-2.000	6.38000	.47290	.12900	-.00010	.06210	-.01200	.00960
35.950	-1.000	6.38000	.47540	.12930	.00020	.04210	-.01100	.00610
35.950	.000	6.38000	.47270	.12920	.00140	.02340	-.01020	.00180
35.950	1.000	6.38000	.47290	.12910	.00170	-.00040	-.00780	-.00170
35.950	2.000	6.38000	.47210	.12940	.00170	-.02340	-.00590	-.00530
35.950	3.000	6.38000	.47110	.12950	-.00290	-.04160	-.00490	-.00870
35.950	4.000	6.38000	.47440	.12940	-.00820	-.06360	-.00340	-.01270
35.970	6.000	6.38000	.47940	.12860	-.02140	-.11110	.00200	-.01970
35.980	8.000	6.38000	.47830	.12630	-.03440	-.16500	.00870	-.02660
36.000	10.000	6.37000	.47940	.12260	-.05030	-.21960	.01560	-.03410
36.030	12.000	6.37000	.47890	.12070	-.05270	-.27790	.02330	-.04150
36.070	14.000	6.37000	.47610	.11800	-.05250	-.33870	.02830	-.04850
36.110	16.000	6.37000	.46670	.11620	-.04940	-.40070	.03320	-.05490
36.220	20.000	6.37000	.43350	.10770	-.03630	-.51980	.03760	-.06530
GRADIENT	.00000	.00000	-.00006	-.00002	-.00092	-.02143	.00151	-.00360

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 84

(RG0086) ( 14 NOV 75 )

CALL UHAL1146(EXT)KIH15.7V9.4 AT70AT71 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

BETA = .000 STAB = -1.900  
ELV-IB = 17.000 ELV-OB = 17.000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 86/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CO	CLM	CY	CLN	CSL
35.980	-4.440	.00000	-33280	.1400	-14240	-.00200	.00180	.00090
35.960	-2.250	.00000	-.14280	.12460	-.19170	-.00160	.00200	.00150
35.950	-.070	.00000	.04260	.11690	-.24730	.00240	.00140	.00230
35.950	2.080	.00000	.22900	.11880	-.31030	.00390	.00100	.00160
35.950	4.230	.00000	.40540	.12690	-.36600	.00600	.00050	.00160
35.960	6.380	.00000	.58110	.14130	-.40730	.00660	.00060	.00260
35.970	8.520	.00000	.75350	.16070	-.45770	.00750	.00030	.00170
36.000	10.650	.00000	.90160	.19050	-.47490	.01270	-.00090	.00200
36.060	2.780	.00000	1.04430	.24050	-.48360	.01540	-.00170	.00190
36.150	4.890	.00000	1.16380	.30580	-.49490	.01620	-.00190	.00230
36.270	16.960	.00000	1.26940	.38470	-.48370	.01880	-.00210	.00280
36.390	18.950	.00000	1.32830	.45820	-.46720	.02090	-.00220	.00140
36.510	20.970	.00000	1.33530	.52470	-.47940	.01860	-.00170	.00170
36.630	22.930	.00000	1.37110	.59890	-.54120	.02110	-.00240	.00330
36.750	24.960	.00000	1.36370	.66560	-.61760	.02270	-.00240	.00360
GRADIENT		.00000	.08929	-.00186	-.02611	.00399	-.00077	.00007

REFERENCE DATA

SREF = 5500.0000 SQ.FT.      XMRP = 1339.9100 IN. XC      BETA = .000      STAB = -1.900  
 LREF = 327.7800 IN.      YMRP = .0000 IN. YC      ELV-1B = -23.000      ELV-0B = -23.000  
 BREF = 2348.0000 IN.      ZMRP = 190.7500 IN. ZC      RUD-U = .000      RUD-L = .000  
 SCALE = .0400      TANK = .000      RTANK = .000

PARAMETRIC DATA

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
36.000	-4.440	.0000	-54860	.15970	.62950	-.00160	.00130	.00050
35.970	-2.250	.00000	-36420	.13390	.58650	-.00180	.00190	.00080
35.950	-.070	.00000	-17580	.12180	.55500	-.00270	.00220	.00080
35.950	2.080	.00000	-.00080	.11790	.54470	-.00010	.00200	.00110
35.950	4.230	.00000	.16610	.12080	.53660	-.00020	.00200	.00120
35.950	6.380	.00000	.33870	.12770	.50070	.00220	.00150	.00150
35.960	8.520	.00000	.50560	.13900	.47330	.00450	.00160	.00200
35.980	10.650	.00000	.65390	.16060	.46440	.00690	.00100	.00180
36.030	12.780	.00000	.79650	.20140	.46020	.00880	.00040	.00180
36.110	14.890	.00000	.92270	.25920	.43830	.01090	.00010	.00220
36.210	16.960	.00000	1.03010	.32800	.41250	.01410	-.00090	.00300
36.320	18.950	.00000	1.11280	.39950	.38310	.01680	-.00140	.00140
36.430	20.910	.00000	1.12390	.45880	.33630	.01550	-.00090	.00170
36.540	22.940	.00000	1.16710	.52560	.25330	.01850	-.00120	.00320
36.650	24.960	.00000	1.19840	.58640	.14280	.01600	-.00090	.00340
	GRADIENT	.00000	.08274	-.00434	-.01107	.00021	.00007	.00008

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DATE 13 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL11W5 )

PAGE 86

CALLUHAL11W5(EXT)KIH15.7V9.4 AT77AT71 T28.1 (RG0088) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC BETA = .000 STAB = .020  
LREF = 327.7800 IN. YMRP = .0000 IN. YC ELV-IB = .000 ELV-OB = .000  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC RUD-U = .000 RUD-L = .000  
SCALE = .0400 ITANK = .000 PTANK = .000

PARAMETRIC DATA

RUN NO. 88/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CO	CLM	CY	CLN	CSL
35 980	-4.440	.0000	-40500	.14380	.12210	-.00350	.00250	.00080
35 950	-2.250	.0000	-21950	.12240	.07490	-.00130	.00210	.00130
35 940	-1.070	.0000	-10280	.11310	.03260	-.00060	.00190	.00150
35 940	2.080	.0000	15080	.11250	-.00570	.00070	.00180	.00200
35 940	4.230	.0000	32520	.11840	-.04780	.00210	.00140	.00230
35 950	6.380	.0000	50090	.13000	-.09320	.00320	.00160	.00190
35 960	8.520	.0000	66830	.14610	-.13260	.00490	.00110	.00190
35 980	10.650	.0000	81840	.17360	-.15200	.00890	.00020	.00190
36 040	12.780	.0000	97080	.22260	-.17210	.01190	-.00050	.00230
36 130	14.830	.0000	109440	.28610	-.18930	.01560	-.00180	.00240
36 240	16.950	.0000	119910	.36160	-.19580	.01610	-.00150	.00240
36 360	18.950	.0000	126520	.43530	-.19910	.01780	-.00120	.00110
36 480	20.910	.0000	12720	.50150	-.22340	.01930	-.00210	.00210
36 600	22.930	.0000	13120	.57290	-.30050	.02030	-.00200	.00260
36 720	24.950	.0000	13460	.64170	-.40260	.01890	-.00160	.00360
GRADIENT		.00000	.08442	-.00281	-.01940	.00061	-.00012	.00017

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( JUAL1146 )

PAGE 87

(RG089) ( 14 NOV 75 )

CALLJUAL1146(EXT)KIH15.7VS.4 AT70AT71 T28.1

## REFERENCE DATA

SREF = 3500.0000 SQ.FT. YMRP = 1334.9100 IN. XC BETA = .000 STAB = -4.000  
LREF = 327.7800 IN. YMRP = .0000 IN. YC ELV-1B = .000 ELV-OB = .000  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC RUD-U = .000 RUD-L = .000  
SCALE = .0400 ITANK = .000 RTANK = .000

## PARAMETRIC DATA

RUN NO. 89/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHAM	BETA	CL	CD	CLM	CY	CLN	CSL
35.980	-4.440	.00000	-.45900	.14700	-.29230	-.00270	.00220	.00080
35.950	-2.250	.00000	-.26750	.12290	-.24280	-.00290	.00240	.00110
35.940	-.070	.00000	-.07860	.11310	-.20230	.00000	.00210	.00130
35.940	2.080	.00000	.10020	.11120	.17130	.00040	.00190	.00100
35.940	4.230	.00000	.27190	.11550	.13570	.00270	.00160	.00140
35.940	5.380	.00000	.45120	.12500	.09680	.00070	.00210	.00120
35.950	6.520	.00000	.61750	.13910	.05970	.00570	.00130	.00210
35.970	10.050	.00000	.76550	.16380	.03350	.00670	.00070	.00110
36.030	12.780	.00000	.91840	.20990	.01250	.01000	.00130	.00130
36.110	14.690	.00000	1.03840	.27080	-.00790	.01500	.00130	.00230
36.220	16.960	.00000	1.14820	.34500	-.01080	.01560	.00120	.00210
36.330	18.950	.00000	1.21520	.41550	-.02650	.01850	.00170	.00140
36.450	20.910	.00000	1.22830	.48000	-.04520	.01870	.00120	.00230
36.560	22.940	.00000	1.27510	.54950	-.13080	.02030	.00220	.00340
24.960	24.960	.00000	1.30880	.61510	-.25880	.01830	.00150	.00330
GRADIENT		.00000	.08443	-.00346	-.01776	.00065	-.00008	.00005

REFERENCE DATA

SREF = 5500.0000 SQ.FT.

LREF = 327.7800 IN.

BREF = 2348.0000 IN.

SCALE = .0400

XMRP = 1339.9100 IN. XC

YMRP = .0000 IN. YC

ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 2.080

ELV-OB = .000

RUD-U = .000

RTANK = .000

STAB = -2.000

ELV-OB = .000

RUD-L = .000

RTANK = .000

Q	BETA	ALPHA	CL	CD	CLM	CV	CLN	CSL
36.230	-20.300	2.0800	.15080	.09120	-.00170	.55670	-.04440	.06270
36.110	-16.000	2.0800	.15920	.09660	-.00700	.42440	-.03590	.05190
36.060	-14.000	2.0800	.15430	.09970	.01600	.35530	-.02820	.04420
36.030	-12.000	2.0800	.14560	.10290	.03730	.29380	-.02110	.03710
35.990	-10.000	2.0800	.13920	.10510	.05010	.23450	-.01430	.02970
35.970	-8.000	2.0800	.13350	.10810	.05650	.18070	-.01010	.02330
35.960	-6.000	2.0800	.13120	.11150	.06750	.13130	-.00610	.01730
35.950	-4.000	2.0800	.12750	.11300	.07680	.08340	-.00140	.01140
35.950	-3.000	2.0800	.12510	.11340	.08050	.05900	.00020	.00870
35.940	-2.000	2.0800	.12560	.11280	.08430	.04020	-.00010	.00600
35.940	-1.000	2.0800	.12420	.11210	.08190	.01940	.00060	.00380
35.940	.000	2.0800	.12470	.11210	.08370	-.00330	.00230	.00050
35.940	1.000	2.0800	.12330	.11200	.08330	-.02910	.00370	-.00280
35.940	2.000	2.0800	.12450	.11240	.07930	-.04690	.00420	-.00520
35.940	3.000	2.0800	.12850	.11250	.07480	-.06730	.00470	-.00780
35.950	4.000	2.0800	.12740	.11260	.05910	-.09080	.00610	-.01050
35.960	6.000	2.0800	.13030	.11100	.05980	-.13760	.01060	-.01620
35.970	8.000	2.0800	.13110	.10760	.04960	-.18670	.01530	-.02160
35.990	10.000	2.0800	.13120	.10410	.04350	-.24040	.02050	-.02830
36.020	12.000	2.0800	.14150	.10140	.03130	-.29820	.02640	-.03600
36.060	14.000	2.0800	.14260	.09910	.01310	-.36030	.03260	-.04300
36.110	16.000	2.0800	.14290	.09550	.00360	-.42610	.03860	-.04980
36.110	18.000	2.0800	.12480	.09060	.02260	-.54840	.04530	-.05890
36.220	20.000	2.0800	.09911	-.00009	-.00092	-.02164	.00092	-.00277

GRADIENT

(RG0091) ( 14 NOV 75 )

CALLUMAL1146(EXT)KIH15.7V9.1 AT70AT71 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.960  
 ELV-IB = .000 ELV-OB = .000  
 RUD-U = .000 RUD-L = .000  
 ITANK = .000 RTANK = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.240	-20.000	6.37000	.45320	.11000	-.03060	.55560	-.04290	.07000
36.120	-16.000	6.37000	.47830	.11580	-.05170	.41960	-.03530	.05690
36.070	-14.000	6.37000	.48380	.11810	-.05350	.35190	-.02890	.04950
36.030	-12.000	6.37000	.49160	.12060	-.05600	.29160	-.02180	.04260
36.000	-10.000	6.37000	.49480	.12150	-.04280	.22900	-.01520	.03490
35.980	-8.000	6.38000	.48030	.12450	-.02320	.17960	-.01100	.02770
35.970	-6.000	6.38000	.48070	.12440	-.00820	.12930	-.00620	.02130
35.960	-4.000	6.38000	.47670	.12850	-.00310	.08140	-.00100	.01450
35.950	-3.000	6.38000	.47540	.12780	.00680	.05990	-.00030	.01070
35.950	-2.000	6.38000	.47490	.12720	.00270	.03900	.00020	.00800
35.940	-1.000	6.38000	.47520	.12630	.00120	.02030	.00000	.00440
35.940	.000	6.38000	.47570	.12590	.00340	.00070	.00170	.00130
35.940	1.000	6.38000	.47530	.12660	.00260	-.02200	.00350	-.00250
35.950	2.000	6.38000	.47510	.12730	.00290	-.04160	.00320	-.00590
35.950	3.000	6.38000	.47700	.12780	.00090	-.06050	.00360	-.00930
35.950	4.000	6.38000	.47900	.12810	.00370	-.08100	.00450	-.01300
35.960	6.000	6.38000	.48050	.12670	-.01750	-.12720	.00920	-.01890
35.980	8.000	6.38000	.48070	.12480	-.03190	-.17720	.01400	-.02640
36.000	10.000	6.37000	.48410	.1190	-.04740	-.22890	.01870	-.03360
36.030	12.000	6.37000	.48010	.11920	-.05350	-.26840	.02500	-.04070
36.070	14.000	6.37000	.47510	.11520	-.04990	-.34950	.03150	-.04710
36.110	16.000	6.37000	.46550	.11330	-.04530	-.41420	.03710	-.05320
36.230	20.000	6.37000	.43580	.10680	-.03150	-.53770	.04170	-.06480
	GRADIENT		.00033	-.00002	-.00099	-.02024	.00072	-.00341

ORIGINAL PAGE IS  
 OF POOR QUALITY

DATE 15 NOV 75

TABLED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 90

CALL UMAL1146(EXT)K1H15.7V9.1 AT70AT71 T28.1

(RG0092) ( 14 NOV 75 )

REFERENCE DATA

SRFF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 12.790 STAB = -1.963  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
LANK = .000 RTANK = .000

RUN NO. 92/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
0	12.7800	.86560	.19210	-.13490	.57380	-.04210	.07500
36.330	12.7800	.91380	.20540	-.15920	.43040	-.03430	.05930
36.220	12.7800	.92000	.20750	-.15780	.36130	-.02780	.05000
36.170	12.7800	.93050	.20940	-.14350	.29540	-.02040	.04210
36.130	12.7800	.93200	.20970	-.13140	.23610	-.01430	.03390
36.090	12.7800	.94100	.21220	-.11740	.18560	-.01100	.02710
36.070	12.7800	.93670	.21280	-.10770	.13490	-.00700	.02040
36.050	12.7800	.94040	.21470	-.09680	.09090	-.00400	.01420
36.040	12.7800	.94200	.21530	-.09270	.06990	-.00310	.01090
36.040	12.7800	.94040	.21490	-.08570	.04740	-.00200	.00700
36.040	12.7800	.94630	.21590	-.08360	.02970	-.00150	.00450
36.030	12.7800	.94750	.21580	-.08350	.00920	-.00040	.00110
36.030	12.7800	.94520	.21540	-.08410	-.01030	.00080	-.00170
36.030	12.7800	.94950	.21520	-.08740	-.02950	.00130	-.00530
36.040	12.7800	.94430	.21450	-.09430	-.04760	.00200	-.00870
36.040	12.7800	.94830	.21460	-.09850	-.07050	.00320	-.01230
36.050	12.7800	.94470	.21230	-.11130	-.11540	.00640	-.01870
36.050	12.7800	.94220	.20990	-.12060	-.16630	.01090	-.02580
36.080	12.7800	.93210	.20580	-.13010	-.22080	.01570	-.03310
36.110	12.7800	.92660	.20420	-.14320	-.27910	.02200	-.04100
36.150	12.7800	.92040	.20210	-.15750	-.34310	.02850	-.04910
36.200	12.7800	.91120	.19870	-.16600	-.41320	.03480	-.05720
36.200	12.7800	.89470	.18170	-.13480	-.54240	.03930	-.07150
36.310	.00000	.00000	.00000	.00000	-.01986	.00088	-.00326

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 91

(RG0093) ( 14 NOV 75 )

CALLUVAL1146TEXTIKIN15.1V9.1 AT70AT71 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2349.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHA = 12.790 STAB = -.960  
 ELV-1B = .000 ELV-OB = .000  
 RUD-U = .000 RUD-L = .000  
 ITANK = .000 RTANK = .000

RUN NO.	93/ 0	AN/L =	.00	GRADIENT INTERVAL =	-5.00/ 5.00	CY	CLN	CSL
0	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.310	-20.000	12.78000	.86430	.19190	-.13010	.53910	-.01970	.67700
36.200	-16.000	12.78000	.91530	.20610	-.15720	.39860	-.01250	.05940
36.150	-14.000	12.78000	.91370	.20610	-.14050	.32700	-.00750	.05030
36.120	-12.000	12.78000	.92660	.20900	-.12570	.26600	-.00230	.04280
36.070	-10.000	12.78000	.92630	.20890	-.11210	.20790	.00200	.03390
36.060	-8.000	12.78000	.93280	.21110	-.10230	.16300	.00290	.02720
36.050	-6.000	12.78000	.93330	.21080	-.09170	.11760	.00300	.02050
36.040	-4.000	12.78000	.93350	.21270	-.08340	.07830	.00240	.01420
36.040	-3.000	12.78000	.93440	.21260	-.07730	.06160	.00120	.01070
36.030	-2.000	12.78000	.93820	.21350	-.07180	.04420	.00060	.00790
36.030	-1.000	12.78000	.93600	.21260	-.06860	.02740	.00050	.00420
36.030	.000	12.78000	.93500	.21230	-.06600	.00990	.00090	.00070
36.020	1.000	12.78000	.93900	.21250	-.06850	-.00730	.00110	-.00200
36.030	2.000	12.78000	.94020	.21270	-.07110	-.02390	.00250	-.00550
36.030	3.000	12.78000	.93890	.21200	-.07620	-.03960	.00370	-.00910
36.030	4.000	12.78000	.94120	.21220	-.07500	-.05590	.00510	-.01230
36.040	6.000	12.78000	.94000	.21050	-.07030	-.09290	.00580	-.01920
36.050	8.000	12.78000	.93480	.20800	-.10670	-.13860	.00530	-.02550
36.070	10.000	12.78000	.93420	.20590	-.11760	-.19010	.00320	-.03410
36.100	12.000	12.78000	.92260	.20310	-.12910	-.24640	.00390	-.04210
36.140	14.000	12.78000	.91970	.20200	-.14330	-.31270	.00650	-.05070
36.180	16.000	12.78000	.90540	.19740	-.15530	-.37460	.00980	-.05860
36.260	20.000	12.78000	.85120	.18560	-.13230	-.50520	.01690	-.07240
GRADIENT	.00000	.00000	.00065	-.00009	-.00003	-.01685	-.00086	-.00331

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 92

(RG0094) ( 14 NOV 75 )

CA11UHAL1146(EXT)KIN(5.1V9.1 AT70AT7) T28.1

REFERENCE DATA

SREF = 3500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.960  
ELV-B = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 94/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.210	-20.000	6.37000	.45660	.10910	-.07120	.50540	-.01240	.06890
36.100	-16.000	6.37000	.48700	.11760	-.07360	.37340	-.00650	.05540
36.050	-14.000	6.37.00	.46320	.11950	-.06220	.30860	-.00200	.04830
36.020	-12.000	6.37000	.48690	.12150	-.04890	.25130	.00250	.04070
35.990	-10.000	6.37000	.48610	.12310	-.03650	.19420	.00530	.03280
35.970	-8.000	6.38000	.48440	.12520	-.02060	.15160	.00660	.02720
35.950	-6.000	6.38000	.47610	.12660	-.00450	.10810	.00650	.02030
35.950	-4.000	6.39000	.47090	.12670	.00530	.06620	.00710	.01380
35.950	-3.000	6.38000	.47280	.12640	.00930	.05030	.00580	.01030
35.940	-2.000	6.38000	.47520	.12560	.00680	.03170	.00370	.00690
35.940	-1.000	6.38000	.47500	.12530	.00440	.01820	.00170	.00420
35.940	0.000	6.38000	.47320	.12510	.00330	.00110	.00080	.00120
35.940	1.000	6.39000	.47220	.12530	.00470	-.01930	.00050	-.00270
35.940	2.000	6.39000	.47310	.12530	.00590	-.03140	.00230	-.00540
35.940	3.000	6.39000	.47170	.12650	.00250	-.04760	.00420	-.00820
35.940	4.000	6.34000	.47540	.12680	-.00120	-.06290	.00580	.01140
35.940	5.000	6.36000	.47530	.12560	-.01040	-.10330	.00590	.01830
35.970	6.000	6.36000	.47030	.12410	-.02600	-.14620	.00550	.02470
35.990	10.000	6.37000	.48110	.12180	-.04150	-.19290	.00450	.03210
36.020	12.000	6.37000	.48090	.11960	-.05370	-.24650	.00080	.03930
36.040	14.000	6.37000	.47400	.11700	-.06460	-.30890	.00390	.04690
36.040	16.000	6.37000	.47420	.11470	-.07570	-.36610	.00690	.05290
36.040	18.000	6.37000	.47140	.10560	-.07450	-.48950	.01120	.06440
36.040	20.000	6.37000	.46010	.00002	-.00087	-.01623	.00159	.03113

GRADIENT

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 93

(RG0095) ( 14 NOV 75 )

CALL UNAL1146 EXT K1H15.1V9.1 AT 70.771 128.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.5100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHA = 2.080 STAB = -1.950  
 ELV-1B = .000 ELV-0B = .000  
 RUD-U = .000 RUD-L = .000  
 ITANK = .000 RTANK = .000

P/N NO. 95/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.200	-20.000	2.09000	.15770	.09110	-.01420	.50290	-.01070	.05910
33.090	-16.000	2.08000	.16340	.08440	-.00370	.37770	-.00680	.04820
36.050	-14.000	2.08000	.15540	.10210	.01540	.31560	-.00240	.04080
36.010	-12.000	2.08000	.15020	.10450	.03210	.25370	.00230	.03350
35.990	-10.000	2.08000	.14580	.10650	.04120	.19960	.00540	.02690
35.970	-8.000	2.08000	.13950	.10860	.04570	.15440	.00630	.02110
35.960	-6.000	2.08000	.13570	.11120	.05630	.11110	.00610	.01580
35.950	-4.000	2.08000	.13230	.11240	.06670	.07020	.00660	.01060
35.940	-2.000	2.08000	.13160	.11270	.07080	.05000	.00570	.00820
35.940	-2.000	2.08000	.12870	.11180	.07230	.03370	.00360	.00590
35.940	-1.000	2.08000	.12020	.11120	.07270	.01790	.00170	.00320
35.940	.000	2.08000	.12980	.11060	.07230	-.00050	.00100	.00050
35.940	1.000	2.08000	.12970	.11060	.07070	-.02060	.00060	-.00200
35.940	2.000	2.08000	.12950	.11150	.06870	-.03810	-.00140	-.00410
35.940	3.000	2.09000	.13490	.11190	.06430	-.05460	-.00310	-.00690
35.950	4.000	2.08000	.13390	.11200	.06050	-.07190	-.00430	-.00870
35.960	6.000	2.08000	.13750	.11100	.05040	-.11410	-.00360	-.01340
35.970	8.000	2.08000	.13980	.10810	.04310	-.15690	-.00340	-.01960
35.990	10.000	2.08000	.14340	.10540	.03530	-.20300	-.00210	-.02560
36.010	12.000	2.08000	.14440	.10340	.03050	-.26000	.00160	-.03220
36.040	14.000	2.08000	.14670	.09950	.01750	-.31470	.00500	-.03870
36.090	16.000	2.08000	.14680	.09630	.00420	-.37550	.00810	-.04480
36.130	18.000	2.08000	.14850	.09200	-.00230	-.43480	.00990	-.05070
36.190	20.000	2.08000	.13420	.09020	.00020	-.49770	.01250	-.05550
	GRADIENT	-.00000	.00009	-.00009	-.00089	-.01774	-.00135	-.00246

ORIGINAL PAGE IS  
 OF POOR QUALITY

2.4

DATE 15 NOV 75  
TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )  
PAGE 94  
(RG0099) ( 14 NOV 75 )

REFERENCE DATA  
SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA  
BETA = .000 STAB = -1.960  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 FUD-L = .000  
ITANK = .000 R/TANK = .000

RUN NO.		99/ 0	RN/L = .00	GRADIENT INTERVAL = -5.00/ 5.00				
Q	ALPHAW	BETA	CL	CD	CLM	CY	CLN	CSL
36.030	-4.440	.00000	-.45200	.14250	.19170	-.00400	.00280	.00070
36.000	-2.250	.00000	-.26320	.12020	.16570	-.00460	.00280	.00130
35.990	-.070	.00000	-.06730	.11060	.13350	-.00220	.00260	.00140
35.990	2.080	.00000	.12200	.10870	.09190	-.00150	.00250	.00050
35.990	4.230	.00000	.30610	.11250	.04550	.00160	.00190	.00090
35.950	6.370	.00000	.49300	.12320	-.01590	.00320	.00210	.00110
36.000	8.520	.00000	.66440	.13840	-.06320	.00520	.00160	.00160
36.030	10.650	.00000	.82380	.16770	-.08400	.00890	.00100	.00170
36.090	12.780	.00000	.97450	.21600	-.09530	.01160	.00010	.00080
36.180	14.890	.00000	1.10000	.28030	-.11170	.01200	.00000	.00120
36.290	16.960	.00000	1.21830	.35970	-.12040	.01060	.00040	.00090
36.410	18.950	.00000	1.29760	.43660	-.14380	.01670	-.00050	.00090
36.530	20.910	.00000	1.32890	.50820	-.16010	.02050	-.00110	.00050
36.670	22.930	.00000	1.38970	.58810	-.21410	.02380	-.00270	.00230
36.810	24.960	.00000	1.44520	.67100	-.28420	.02590	-.00340	.00260
GRADIENT		.00000	.068774	-.00331	-.01689	.00066	-.00010	-.00002

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

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(R00100) ( 14 NOV 75 )

CALL UMAL1146(EXT)KIH15.6V9.ICIV11 AT86AT87 T28.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHA = 2.080 STAB = -1.950  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 100/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.300	-20.000	2.08000	.17960	.08560	-.09190	.60160	-.04850	.06590
36.180	-16.000	2.08000	.17990	.09300	-.06820	.46960	-.04410	.05610
36.130	-14.000	2.08000	.17190	.09710	-.03870	.40150	-.03790	.04930
36.090	-12.000	2.08000	.15800	.10050	-.00860	.33380	-.03040	.04270
36.050	-10.000	2.08000	.14680	.10200	.01190	.26640	-.02290	.03500
36.030	-8.000	2.08000	.13940	.10320	.02940	.20810	-.01510	.02740
36.010	-6.000	2.08000	.13430	.10360	.04110	.15130	-.00970	.02050
35.990	-4.000	2.08000	.13080	.10550	.06110	.10410	-.00640	.01470
35.990	-3.000	2.08000	.12720	.10740	.08300	.07670	-.00410	.01080
35.990	-2.000	2.08000	.12420	.10850	.08690	.05120	-.00220	.00780
35.990	-1.000	2.08000	.12470	.10890	.09290	.02630	.00000	.00400
35.990	.000	2.08000	.12270	.10870	.09200	-.00010	.00210	.00030
35.990	1.000	2.08000	.12630	.10840	.09020	-.02740	.00460	-.00290
35.990	2.000	2.08000	.12360	.10750	.08500	-.05330	.00690	-.00660
35.990	3.000	2.08000	.12790	.10720	.07450	-.07930	.00900	-.00980
36.000	4.000	2.08000	.13060	.10640	.06590	-.10300	.01060	-.01340
36.010	6.000	2.08000	.13500	.10350	.03610	-.15260	.01480	-.01990
36.030	8.000	2.08000	.13790	.10260	.02400	-.20570	.01990	-.02590
36.050	10.000	2.08000	.14230	.10040	.00520	-.26610	.02740	-.03370
36.090	12.000	2.08000	.15230	.09830	-.01840	-.33140	.03500	-.03980
36.130	14.000	2.08000	.16490	.09600	-.04630	-.39720	.04100	-.04680
36.180	16.000	2.08000	.16690	.09190	-.07120	-.46480	.04640	-.05360
36.290	20.000	2.08000	.16080	.08350	-.08960	-.59000	.04900	-.06220
	GRADIENT	-.00000	.00003	.00001	-.00015	-.02598	.00217	-.00350

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL114G )

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(R00101) ( 14 NOV 75 )

CALL UMAL114G EXT K1H15.6V9.1C1V11 AT86AT87 T28.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.5100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.960  
ELV-1B = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 101/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.320	-20.000	6.37000	.45930	.10910	-.09850	.58980	-.03870	.06780
36.190	-16.000	6.37000	.49890	.11480	-.12370	.45880	-.03970	.05670
36.140	-14.000	6.37000	.49890	.11710	-.11700	.39000	-.03550	.05230
36.100	-12.000	6.37000	.50320	.12060	-.09800	.32650	-.02980	.04570
36.060	-10.000	6.37000	.49680	.12140	-.07760	.26100	-.02200	.03840
36.040	-8.000	6.37000	.49070	.12210	-.05680	.20290	-.01580	.03090
36.020	-6.000	6.37000	.48700	.12170	-.04110	.14770	-.00970	.02380
36.000	-4.000	6.37000	.48910	.12260	-.03100	.09970	-.00510	.01690
35.990	-3.000	6.37000	.48930	.12230	-.02760	.07450	-.00320	.01240
35.990	-2.000	6.37000	.48410	.12190	-.02230	.05150	-.00190	.00860
35.990	-1.000	6.37000	.48650	.12250	-.01790	.02650	.00020	.00470
35.990	.000	6.37000	.48860	.12260	-.01480	.00340	.00180	.00100
35.990	1.000	6.37000	.48590	.12270	-.01600	-.02270	.00370	-.00380
35.990	2.000	6.37000	.48920	.12290	-.01860	-.04620	.00560	-.00690
36.000	3.000	6.37000	.48910	.12230	-.02390	-.06900	.00680	-.01110
36.000	4.000	6.37000	.48760	.12230	-.03310	-.09340	.00920	-.01530
36.010	6.000	6.37000	.49100	.12200	-.04530	-.14400	.01370	-.02270
36.030	8.000	6.37000	.49050	.12100	-.06100	-.20110	.01960	-.03060
36.060	10.000	6.37000	.49780	.12090	-.07930	-.26180	.02740	-.03760
36.100	12.000	6.37000	.49560	.11980	-.09580	-.32320	.03440	-.04400
36.140	14.000	6.37000	.49690	.11660	-.11640	-.38370	.03860	-.04990
36.190	16.000	6.37000	.48740	.11470	-.12920	-.44740	.04150	-.05510
36.300	20.000	6.37000	.45730	.10520	-.10510	-.57260	.04180	-.06490
	GRADIENT	.00000	.00002	.00002	.00019	-.02412	.00176	-.00398

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

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( 14 NOV 75 )

CALL UMAL1146 (EXT) KIH15.6V9.1CIV11 AT86AT87 T28.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
 LREF = 327.7800 IN.  
 BREF = 2348.0000 IN.  
 SCALE = .0400

XMRP = 1339.9100 IN. XC  
 YMRP = .0000 IN. YC  
 ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHA = 12.790 STAB = -1.960  
 ELV-IB = .000 ELV-OB = .000  
 RUD-U = .000 RUD-L = .000  
 JTANK = .000 RTANK = .000

RUN NO. 102/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
0	12.77000	.88210	.19740	-.13450	.59780	-.03870	.07370
36.410	12.78000	.93510	.21100	-.18020	.45020	-.03350	.05870
36.290	12.78000	.95420	.21470	-.18440	.38900	-.03300	.05150
36.240	12.78000	.96310	.21670	-.17750	.32980	-.02980	.04390
36.200	12.78000	.96510	.21660	-.15870	.26500	-.02430	.03660
36.170	12.78000	.96980	.21690	-.13740	.20470	-.01720	.02930
36.140	12.78000	.97840	.21750	-.13040	.15160	-.01170	.02230
36.110	12.78000	.97380	.21680	-.11800	.10410	-.00840	.01580
36.100	12.78000	.96940	.21550	-.11050	.08140	-.00640	.01170
36.090	12.78000	.97430	.21660	-.10600	.05930	-.00490	.00800
36.090	12.78000	.97460	.21540	-.10020	.03420	-.00230	.00410
36.090	12.78000	.97320	.21620	-.09770	.01250	-.00020	.00090
36.090	12.78000	.97780	.21650	-.09830	-.01330	.00270	-.00340
36.090	12.78000	.98360	.21770	-.10460	-.03760	.00510	-.00760
36.100	12.78000	.97490	.21570	-.10980	-.06000	.00720	-.01130
36.100	12.78000	.98320	.21770	-.11780	-.08280	.00890	-.01510
36.110	12.78000	.97640	.21610	-.12990	-.13170	.01310	-.02220
36.130	12.78000	.97660	.21540	-.13560	-.18820	.01920	-.02910
36.150	12.78000	.97010	.21420	-.14880	-.24500	.02480	-.03670
36.190	12.78000	.96080	.21220	-.17250	-.30940	.03100	-.04390
36.230	12.78000	.95160	.21030	-.19270	-.36780	.03360	-.05100
36.270	12.78000	.93850	.20740	-.19330	-.42790	.03410	-.05790
36.380	12.77000	.88280	.19520	-.15400	-.55410	.03660	-.06950
GRADIENT	.00000	.00126	.00011	.00013	-.02352	.00225	-.00385

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 OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

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CALL UHAL1146(EXT)KIHI5.6V9.1C1V11 AT86AT87 T28.1

(R00103) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XRRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YRRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZRRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.960  
ELV-IB = .000 ELV-OB = .000  
RUD-U = 25.000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 103/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.340	-20.000	6.37000	.46320	.11200	-.09740	.62290	-.05610	.07180
36.220	-16.000	6.37000	.49750	.11870	-.12110	.49480	-.05850	.06150
36.160	-14.000	6.37000	.50470	.12150	-.11400	.42890	-.05450	.05530
36.120	-12.000	6.37000	.50220	.12240	-.09310	.36130	-.04810	.04880
36.080	-10.000	6.37000	.49740	.12330	-.07400	.29320	-.04020	.04160
36.050	-8.000	6.37000	.49280	.12430	-.05070	.23160	-.03160	.03410
36.020	-6.000	6.37000	.48980	.12390	-.03520	.17260	-.02310	.02580
36.010	-4.000	6.37000	.48770	.12430	-.02630	.12290	-.01800	.01900
36.000	-3.000	6.37000	.49010	.12450	-.02040	.09940	-.01630	.01430
36.000	-2.000	6.37000	.48810	.12460	-.01680	.07550	-.01450	.01140
36.000	-1.000	6.37000	.48930	.12550	-.01160	.04990	-.01260	.00710
36.000	.000	6.37000	.48570	.12540	-.00650	.02720	-.01090	.00340
36.000	1.000	6.37000	.48990	.12550	-.00940	.00100	-.00910	-.00040
36.000	2.000	6.37000	.49070	.12580	-.01160	.02290	-.00740	-.00530
36.000	3.000	6.37000	.48930	.12550	-.01830	-.04900	-.00500	-.00960
36.000	4.000	6.37000	.49040	.12530	-.02650	-.07370	-.00280	-.01360
36.020	6.000	6.37000	.48740	.12470	-.03650	-.12390	-.00230	-.02130
36.040	8.000	6.37000	.48920	.12450	-.05100	-.17770	.00730	-.02870
36.060	10.000	6.37000	.48830	.12410	-.06700	-.22610	.01360	-.03500
36.100	12.000	6.37000	.49560	.12430	-.07970	-.29530	.01840	-.04100
36.130	14.000	6.37000	.49310	.12050	-.09380	-.35570	.02270	-.04700
36.180	16.000	6.37000	.48900	.11860	-.11010	-.41810	.02570	-.05230
36.250	20.000	6.37000	.45580	.10870	-.09170	-.54440	.02650	-.06210
GRADIENT		.00000	.00024	.00016	.00030	-.02462	.00187	-.00405

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL11146 )

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CALL UMAL11146(EXT)K1H15.6V9.IC1V11 AT86AT87 T28.:

(R00104) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHA = 2.080 STAB = -1.960  
ELV-18 = .000 ELV-08 = .000  
RUD-U = 25.000 RUD-L = 25.000  
ITANK = .000 RTANK = .000

RUN NO. 104/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.350	-20.000	2.08000	.17740	.09100	-.07690	.66420	-.07960	.07180
36.220	-16.000	2.08000	.17660	.09890	-.04830	.53320	-.07690	.06310
36.170	-14.000	2.08000	.16830	.10210	-.02090	.46310	-.07050	.05660
36.120	-12.000	2.08000	.15650	.10490	.00680	.39730	-.06380	.04900
36.080	-10.000	2.08000	.14750	.10610	.02410	.32890	-.05500	.04100
36.050	-8.000	2.08000	.13490	.10600	.04530	.25820	-.04320	.03300
36.020	-6.000	2.08000	.13100	.10660	.05560	.19830	-.03470	.02600
36.010	-4.000	2.08000	.12630	.10910	.07500	.14620	-.02880	.01920
36.000	-3.000	2.08000	.12490	.11150	.09020	.12520	-.02730	.01630
36.000	-2.000	2.08000	.12540	.11270	.09960	.09890	-.02550	.01310
36.000	-1.000	2.08000	.12500	.11310	.10070	.07470	-.02370	.00920
36.000	.000	2.08000	.12600	.11290	.09650	.04750	-.02120	.00570
36.000	1.000	2.08000	.12490	.11290	.09430	.02220	-.01900	.00250
36.000	2.000	2.08000	.12530	.11280	.08990	-.00440	-.01690	-.00110
36.000	3.000	2.08000	.13270	.11250	.07900	-.03170	-.01370	-.00530
36.000	4.000	2.08000	.13510	.11140	.06670	-.06400	-.01030	-.00930
36.010	6.000	2.08000	.13980	.10920	.04400	-.11240	-.00300	-.01520
36.020	8.000	2.08000	.14080	.10800	.03050	-.16370	-.00310	-.02130
36.050	10.000	2.08000	.14340	.10750	.01770	-.22130	.00230	-.02770
36.080	12.000	2.03000	.15130	.10580	-.00670	-.28030	.00700	-.03340
36.120	14.000	2.08070	.15820	.10280	-.03030	-.33940	.01150	-.03990
36.160	16.000	2.08000	.16670	.10000	-.04510	-.40840	.01590	-.04570
36.200	20.000	2.08000	.15350	.09110	-.05670	-.53100	.01880	-.05440
36.270	GRADIENT	-.00000	.00100	.00022	-.00154	-.02618	.00228	-.00356

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL11W5 )

PAGE 100

CALLUMAL1146(EXT)KI15.6V9.1CIV11 AT86AT87 T28.1 (RG0105) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 7500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHA = 12.790 STAB = -1.960  
ELV-1B = .000 ELV-OB = .000  
RUD-U = 25.000 RUD-L = 25.000  
ITANK = .000 RTANK = .000

RUN NO. 105/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CO	CLM	CY	CLN	CSL
36.450	-20.000	12.77000	.87880	.20170	-.12380	.64500	-.06490	.07260
36.330	-16.000	12.78000	.92930	.21600	-.16590	.51060	-.06370	.05880
36.280	-14.000	12.73000	.94500	.21750	-.17060	.45050	-.06400	.05140
36.230	-12.000	12.78000	.95720	.21890	-.16630	.38390	-.06040	.04390
36.190	-10.000	12.78000	.96180	.21940	-.15320	.32440	-.05510	.03630
36.160	-8.000	12.78000	.96840	.22040	-.13250	.26140	-.04660	.02900
36.130	-6.000	12.78000	.96950	.21980	-.12050	.20610	-.03990	.02230
36.110	-4.000	12.78000	.96860	.22000	-.11050	.15310	-.03360	.01530
36.100	-3.000	12.78000	.97180	.22050	-.10200	.13060	-.03200	.01180
36.100	-2.000	12.78000	.96520	.21930	-.09730	.10590	-.02950	.00790
36.100	-1.000	12.78000	.96420	.21860	-.09010	.08280	-.02780	.00490
36.090	.000	12.78000	.96850	.21960	-.08920	.05950	-.02480	.00070
36.090	1.000	12.78000	.97000	.21970	-.08570	.03480	-.02230	-.00270
36.090	2.000	12.78000	.97210	.21960	-.08880	.00940	-.01930	-.00690
36.100	3.000	12.78000	.97060	.21880	-.09840	-.01650	-.01590	-.01090
36.110	4.000	12.78000	.97370	.21990	-.10400	-.04310	-.01300	-.01470
36.120	6.000	12.78000	.97140	.22040	-.11540	-.09130	-.00930	-.02220
36.150	8.000	12.78000	.96980	.21960	-.12130	-.14200	-.00490	-.02900
36.180	10.000	12.78000	.96190	.21940	-.13260	-.19460	-.00020	-.03630
36.220	12.000	12.78000	.96030	.21880	-.15400	-.25800	.00420	-.04400
36.260	14.000	12.78000	.94980	.21670	-.17340	-.31920	.00660	-.05100
36.370	16.000	12.78000	.93340	.21430	-.17870	-.37530	.00690	-.05740
	20.000	12.78000	.88230	.20310	-.14020	-.50810	.01000	-.06330
GRADIENT		.00000	.00061	-.00006	.00095	-.02446	.00261	-.00375

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA1: ( UMAL1146 )

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CA11UMAL1146(EXT)K1H15.6V9.1C1V11 AT86AT87 T28.1

(RG0106) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
 LREF = 327.7800 IN.  
 BREF = 2348.0000 IN.  
 SCALE = .0400

XMRP = 1339.9100 IN. XC  
 YMRP = .0000 IN. YC  
 ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHAM = 6.380 STAB = -.1960  
 ELV-1B = .000 ELV-OB = .000  
 RUO-U = 25.000 RUO-L = 25.000  
 ITANK = .000 RTANK = .000

RUN NO. 106/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.360	-20.000	6.37000	.45960	.11470	-.09210	.64600	-.06960	.07250
36.230	-16.000	6.37000	.49110	.12030	-.11760	.52140	-.07240	.06300
36.180	-14.000	6.37000	.50110	.12330	-.10600	.45870	-.06900	.05640
36.130	-12.000	6.37000	.49670	.12520	-.08470	.38970	-.06230	.05000
36.090	-10.000	6.37000	.49410	.12610	-.06390	.32200	-.05420	.04230
36.050	-8.000	6.37000	.48670	.12590	-.04060	.25640	-.04480	.03460
36.030	-6.000	6.37000	.48550	.12590	-.02600	.19620	-.03560	.02690
36.020	-4.000	6.37000	.48530	.12690	-.02350	.14710	-.03010	.01960
36.010	-3.000	6.37000	.48430	.12670	-.01850	.12090	-.02710	.01570
36.000	-2.000	6.37000	.48450	.12670	-.01360	.09590	-.02490	.01150
36.000	-1.000	6.37000	.48630	.12770	-.01020	.07170	-.02300	.00780
36.000	.000	6.37000	.48740	.12720	-.00630	.04540	-.02080	.00380
36.000	1.000	6.37000	.48820	.12770	-.00910	.02470	-.01490	.00030
36.000	2.000	6.37000	.49090	.12790	-.01140	-.00030	-.01860	-.00470
36.000	3.000	6.37000	.48820	.12730	-.01860	-.02590	-.01590	-.00820
36.000	4.000	6.37000	.48930	.12660	-.02680	-.05380	-.01270	-.01230
36.020	6.000	6.37000	.49200	.12750	-.03890	-.10560	-.00720	-.02000
36.040	8.000	6.37000	.49190	.12740	-.05520	-.15880	-.00260	-.02780
36.060	10.000	6.37000	.49200	.12770	-.06310	-.21480	.00240	-.03500
36.100	12.000	6.37000	.49610	.12790	-.07960	-.27490	.00630	-.04030
36.130	14.000	6.37000	.49530	.12490	-.09770	-.33110	.00000	-.04640
36.170	16.000	6.37000	.48770	.12220	-.10740	-.39320	.01120	-.05130
36.200	20.000	6.37000	.45490	.11230	-.08590	-.51450	.01140	-.06100
GRADIENT		.00000	.00075	.00005	-.00013	-.02472	.00198	-.00399

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TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 102

CA11UHAL1146(EXTK)H15.6V9.1C1V11 AT86AT87 T28.1 (RG0107) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
 LREF = 327.7800 IN.  
 BREF = 2348.0000 IN.  
 SCALE = .0400

XMRP = 1339.9100 IN. XC  
 YMRP = .0000 IN. YC  
 ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHA = 6.380 STAB = -1.950  
 ELV-1B = .000 ELV-OB = .000  
 RUD-U = .000 RUD-L = 25.000  
 ITANK = .000 ITANK = .000

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.340	-20.000	6.37000	.46380	.11220	-.09390	.61580	-.05320	.06950
36.210	-16.000	6.37000	.49590	.11900	-.12260	.48980	-.05480	.05910
36.160	-14.000	6.37000	.50220	.12110	-.11080	.42270	-.05120	.05280
36.120	-12.000	6.37000	.50060	.12250	-.08780	.35910	-.04510	.04610
36.080	-10.000	6.37000	.49980	.12460	-.06810	.29020	-.03720	.03940
36.050	-8.000	6.37000	.49050	.12440	-.04820	.22670	-.02500	.03180
36.020	-6.000	6.37000	.49100	.12430	-.03120	.17180	-.02000	.02400
36.010	-4.000	6.37000	.49080	.12480	-.02630	.12090	-.01670	.01680
36.000	-3.700	6.37000	.48880	.12540	-.02270	.09730	-.01410	.01400
36.000	-2.000	6.37000	.49590	.12580	-.01850	.06730	-.01130	.00880
36.000	-1.000	6.37000	.49110	.12520	-.01530	.04640	-.00950	.00580
36.000	.000	6.37000	.49220	.12580	-.01080	.01920	-.00750	.00120
36.000	1.000	6.37000	.48960	.12520	-.01230	-.00340	-.00620	-.00250
36.000	2.000	6.37000	.49350	.12580	-.01510	-.02500	-.00470	-.00730
36.000	3.000	6.37000	.49270	.12560	-.02400	-.05240	-.00240	-.01090
36.000	4.000	6.37000	.49030	.12490	-.03070	-.07520	-.00040	-.01480
36.040	6.000	6.37000	.49750	.12520	-.04550	-.13030	.00500	-.02280
36.060	8.000	6.37000	.49670	.12470	-.06110	-.18270	.01020	-.03010
36.060	10.000	6.37000	.49660	.12450	-.07890	-.24200	.01770	-.03700
36.100	12.000	6.37000	.50590	.12400	-.09430	-.30210	.02280	-.04400
36.140	14.000	6.37000	.50210	.12110	-.11210	-.36280	.02700	-.04920
36.180	16.000	6.37000	.49110	.11910	-.11940	-.42410	.02940	-.05390
36.280	20.000	6.37000	.46240	.10840	-.10280	-.53990	.02900	-.06360
GRADIENT		.00000	.00006	.00002	-.00023	-.02446	.00195	-.00403

RUN NO. 107/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

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TABULATED SOURCE FORCE DATA - CALL ( UMAP1146 )

PAGE 103

CA11UMAL1146(EXT)KIH15.6V2.1CIV11 AT86AT87 T28.1

(PG0108) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

BETA = .000 STAB = -1.980  
ELV-18 = 17.000 ELV-08 = 17.000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 108/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
36.040	-4.440	.00000	-.35360	.14160	-.15820	-.00380	.00280	.00030
36.010	-2.250	.00000	-.15370	.12180	-.20070	-.00230	.00260	.00100
36.000	-.070	.00000	.04470	.11530	-.26310	.00120	.00180	.00150
36.000	2.080	.00000	.23560	.11710	-.32410	.00250	.00200	.00150
36.000	4.230	.00000	.41800	.12490	-.37440	.00460	.00150	.00200
36.010	6.370	.00000	.60230	.13930	-.43040	.00560	.00140	.00170
36.020	8.520	.00000	.77320	.15930	-.46930	.00720	.00130	.00150
36.050	10.650	.00000	.93120	.19150	-.47660	.01110	.00040	.00200
36.120	12.780	.00000	1.07900	.24310	-.46310	.01410	.00050	.00150
36.210	14.890	.00000	1.20370	.31100	-.48720	.01170	.00000	.00140
36.330	16.960	.00000	1.30500	.38970	-.47490	.01150	.00000	.00130
36.450	18.950	.00000	1.37830	.46690	-.47610	.02190	.00120	.00140
36.580	20.900	.00000	1.41010	.54230	-.47780	.02290	.00110	.00040
36.710	22.930	.00000	1.46230	.62440	-.50880	.02610	.00300	.00240
36.850	24.960	.00000	1.50710	.70560	-.55720	.03190	.00420	.00280
GRADIENT		.00000	.08918	-.00177	-.02565	.00100	-.00015	.00018

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TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 104

CALLUMAL1146(EXT)KIH15.6V9.1CIV11 AT86AT87 T26.1

(RG0109)

( 14 NOV 75 )

# REFERENCE DATA

SREF = 5500.0000 SQ.FT. XPRP = 1379.9100 IN. XC BETA = .030 STAB = -1.970  
 LREF = 327.7800 IN. YPRP = .0000 IN. YC ELV-IB = -23.000 ELV-OB = -23.000  
 BREF = 2348.0000 IN. ZPRP = 190.7500 IN. ZC RUD-U = .000 RUD-L = .000  
 SCALE = .0400 ITANK = .030 RTANK = .000

# PARAMETRIC C - A

RUN NO. 109/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
36.050	-4.440	.00000	-.55550	.15660	.59570	-.00440	.00340	.00060
36.020	-2.250	.00000	-.37290	.13190	.57510	-.00490	.00330	.00050
36.010	-.070	.00000	-.1730	.11940	.56510	-.00540	.00330	.00110
36.010	2.080	.00000	-.01110	.11570	.58870	-.00250	.00320	.00080
36.010	4.230	.00000	.16000	.11680	.57830	-.00130	.00290	.00100
36.010	6.370	.00000	.33960	.12350	.54950	-.00070	.00300	.00130
36.010	8.520	.00000	.51570	.13600	.51170	.00100	.00320	.00100
36.030	10.650	.00000	.67210	.15950	.48660	.00710	.00190	.00100
36.080	12.780	.00000	.82280	.20060	.46200	.00790	.00160	.00090
36.170	14.890	.00000	.95790	.26110	.43490	.00710	.00180	.00120
36.270	16.960	.00000	1.07370	.33380	.42390	.00660	.00170	.00090
36.380	18.950	.00000	1.15620	.40370	.36980	.01680	.00060	.00100
36.500	20.910	.00000	1.20120	.47360	.34050	.02070	-.00040	.00120
36.630	22.930	.00000	1.26270	.55330	.29220	.02230	-.00160	.00270
36.750	24.960	.00000	1.31510	.62400	.21210	.02390	-.00250	.00320
GRADIENT		.00000	.08274	-.00443	-.00099	.00040	-.00005	.00003

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1148 )

PAGE 105

CALLUMAL1146(EXT)KIHI5.6V9.ICIV11 AT86AT87 T28.1

(RG0110) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 193.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = .000  
ELV-18 = .000 ELV-08 = .000  
RUC-U = .000 RUC-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 110/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

U	ALPHAM	BETA	CL	CD	CLM	CY	CLN	CSL
36.030	-4.440	.00000	-4.3100	.14110	.11480	-.00350	.00300	.00090
36.000	-2.250	.00000	-2.3970	.11980	.08500	-.00280	.00250	.00140
35.990	-.070	.00000	-.04130	.11080	.04860	-.00170	.00150	.00120
35.990	2.080	.00000	.14770	.10590	.00320	-.00110	.00260	.00120
35.990	4.230	.00000	.33370	.11490	-.04880	.00000	.00240	.00130
36.000	6.370	.00000	.51520	.12710	-.10630	.00350	.00190	.00150
36.010	8.520	.00000	.68850	.14430	-.14610	.00520	.00180	.00110
36.040	10.650	.00000	.84560	.17380	-.16350	.00810	.00120	.00160
36.100	12.760	.00000	.99910	.22330	-.17680	.01200	.00040	.00160
36.190	14.890	.00000	1.12100	.28840	-.19300	.01000	.00060	.00160
36.300	16.960	.00000	1.23950	.36830	-.19780	.01020	.00050	.00100
36.420	18.950	.00000	1.32210	.44670	-.22200	.01950	-.00050	.00090
36.550	20.910	.00000	1.35290	.51860	-.23320	.02240	-.00060	.00060
36.680	22.930	.00000	1.40590	.59870	-.27260	.02520	-.00250	.00260
36.820	24.960	.00000	1.45670	.68060	-.34420	.02740	-.00350	.00280
	GRADIENT	.00000	.08840	-.00209	-.01886	.00040	-.00005	.00003

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TABULATED SOURCE FORCE DATA - CALL ( UAL1146 )

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CALL UAL1146(EXTIK(H15.6V9.ICIV11 AT86AT87 T28.1)

(R60111) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.F1.  
LREF = 327.7800 IN.  
BREF = 2305.0000 IN.  
SCALE = .0400

XMRP = 1359.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 130.7500 IN. ZC

PARAMETRIC DATA

BETA = .000 STAB = -4.000  
ELV-1B = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 111/ 0 RN/L .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	BETA	CL	CL	CD	CLM	CY	CLN	CSL
36.030	-4.440	.00000	-4.760	.14440	.14440	.28220	-.00360	.00310	.00080
36.000	-2.250	.00010	-.28150	.12100	.12100	.25520	-.00440	.00300	.00080
35.990	-.070	.00000	-.09370	.11100	.11100	.22630	-.00110	.00250	.00080
35.990	2.080	.00000	.01600	.10830	.10830	.18920	-.00070	.00250	.00100
35.990	4.230	.00000	.29040	.11100	.11100	.14450	.00040	.00250	.00130
35.990	6.370	.00000	.46760	.12080	.12080	.09090	.00020	.00100	.00100
36.000	8.520	.00000	.64000	.13630	.13630	.04510	.00310	.00230	.00090
36.020	10.650	.00000	.79290	.16400	.16400	.02220	.00680	.00150	.00100
36.080	12.780	.00000	.94650	.20970	.20970	.00420	.01210	.00020	.00150
36.170	14.890	.00000	1.08020	.27480	.27480	-.01060	.01020	.00090	.00120
36.280	16.960	.00000	1.19120	.35320	.35320	-.01370	.00830	.00100	.00120
36.400	18.990	.00000	1.27500	.42740	.42740	-.04430	.01370	-.00050	.00160
36.520	20.910	.00000	1.31040	.49970	.49970	-.08590	.02150	-.00070	.00070
36.650	22.930	.00000	1.37080	.57770	.57770	-.12170	.02330	-.00200	.00250
36.960	24.960	.00000	1.42430	.61920	.61920	-.19650	.02540	-.00320	.00250
GRADIENT		.00000	.08752	-.00368	-.00368	-.01575	.00354	-.00007	.00096

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TABULATED SOURCE FORCE DATA - CA11 ( UVAL1146 )

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(RG0112) ( 14 NOV 75 )

CA11UVAL1146(EXT)KIH15.6V9.1C1 AT86AT87 T28.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHA = 2.080 STAB = -2.000  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 112/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
0	36.260	2.08000	.17450	.08450	-.07800	.53550	-.01800	.05210
36.150	-20.000	2.08000	.17500	.09160	-.05230	.41200	-.01710	.04440
36.110	-16.000	2.08000	.17500	.09160	-.05230	.41200	-.01710	.04440
36.070	-14.000	2.08000	.16510	.09480	-.02170	.34950	-.01400	.03910
36.040	-12.000	2.08000	.15750	.09880	.00750	.28890	-.00910	.03300
36.020	-10.000	2.08000	.14130	.10010	.02800	.22530	-.00360	.02660
36.000	-8.000	2.08000	.13370	.10210	.04070	.16960	.00080	.02060
35.990	-6.000	2.08000	.13370	.10280	.05320	.12220	.00290	.01530
35.980	-4.000	2.08000	.12840	.10580	.07810	.08040	.00310	.01030
35.970	-3.000	2.08000	.12490	.10660	.08910	.05930	.00310	.00830
35.960	-2.000	2.08000	.12250	.10710	.09850	.03710	.00300	.00530
35.950	-1.000	2.08000	.11740	.10740	.10290	.01750	.00290	.00320
35.940	.000	2.08000	.11730	.10790	.10130	-.00450	.00330	.00030
35.930	1.000	2.08000	.11900	.1030	.09880	-.02690	.00340	-.00260
35.920	2.000	2.08000	.12080	.10710	.09310	-.05070	.00370	-.00510
35.910	3.000	2.08000	.12390	.10440	.08460	-.06860	.00350	-.00770
35.900	4.000	2.08000	.12630	.10630	.07490	-.09240	.00380	-.01030
36.000	6.000	2.08000	.13200	.10360	.05190	-.13440	.00430	-.01490
36.020	8.000	2.08000	.13370	.10160	.03500	-.18370	.00680	-.02070
36.040	10.000	2.08000	.14000	.09800	.01970	-.23900	.01190	-.02630
36.070	12.000	2.08000	.14820	.09800	-.00750	-.29820	.01650	-.03240
36.110	14.000	2.08000	.15650	.09490	-.03080	-.35680	.02030	-.03760
36.160	16.000	2.08000	.16220	.09140	-.05410	-.42220	.02210	-.04200
36.260	20.000	2.08000	.15370	.08260	-.07130	-.53150	.01920	-.04850
GRADIENT		-.00000	-.00022	.00002	-.00069	-.02158	.00010	-.00262

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TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 108

CA11UHAL1146(EXT)KIH15.6V9.1C1 AT86AT87 T28.1 (R00113) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XRRP = 1339.9100 IN. XC  
YRRP = .0000 IN. YC  
ZRRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHAM = 6.380 STAB = -2.000  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 113/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.280	-20.000	6.37000	.46210	.10730	-.09910	.53000	-.01070	.05900
36.160	-16.000	6.37000	.43390	.11240	-.10850	.39930	-.01200	.04890
36.120	-14.000	6.37000	.49550	.11560	-.10100	.34050	-.01080	.04400
36.080	-12.000	6.37000	.49480	.11710	-.08280	.27790	-.00750	.03860
36.050	-10.000	6.37000	.49030	.11940	-.06190	.21930	-.00320	.03170
36.630	-8.000	6.37000	.48820	.12080	-.04310	.16600	-.00110	.02580
36.010	-6.000	6.37000	.48530	.12110	-.02350	.12090	.00360	.02030
36.000	-4.000	6.37000	.48550	.12090	-.02070	.07760	.00450	.01350
35.990	-3.000	6.37000	.48290	.12120	-.01410	.05720	.00410	.01010
35.990	-2.000	6.37000	.48500	.12130	-.01060	.03780	.00330	.00720
35.990	-1.000	6.37000	.48460	.12120	-.00610	.01850	.00330	.00360
35.990	.000	6.37000	.48360	.12140	-.00160	-.00050	.00270	.00000
35.990	1.000	6.37000	.48380	.12190	-.00390	-.02070	.00220	-.00280
35.990	2.000	6.37000	.48490	.12150	-.00470	-.04280	.00240	-.00600
35.990	3.000	6.37000	.48570	.12170	-.01350	-.06240	.00150	-.01000
36.000	4.000	6.37000	.48340	.12150	-.02020	-.07950	.00110	-.01350
36.010	6.000	6.37000	.48690	.12130	-.03150	-.12450	.00190	-.01960
36.030	8.000	6.37000	.48710	.12050	-.04880	-.17450	.00530	-.02550
36.050	10.000	6.37000	.49190	.12030	-.06640	-.23060	.01080	-.03170
36.080	12.000	6.37000	.48880	.11790	-.07950	-.28680	.01450	-.03730
36.120	14.000	6.37000	.48790	.11580	-.10180	-.34420	.01690	-.04230
36.170	16.000	6.37000	.48040	.11380	-.11210	-.40520	.01680	-.04630
36.260	20.000	6.37000	.45640	.10450	-.10050	-.51570	.01340	-.05540
GRADIENT	.00000	.00000	-.00002	.00008	.00030	-.01979	-.00040	-.00336

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 109

(R00114) ( 14 NOV 75 )

CALLUHAL1146(EXT)KIH15.6V9.1C1 AT86AT87 T28.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHA = 12.790 STAB = -2.000  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 114/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.370	-20.000	12.77000	.87510	.19300	-.13040	.53770	-.01030	.05850
36.260	-16.000	12.78000	.93670	.20870	-.17970	.39500	-.00560	.05430
36.210	-14.000	12.78000	.94520	.20960	-.17440	.33480	-.00550	.04700
36.180	-12.000	12.78000	.95120	.21270	-.16190	.27810	-.00510	.03950
36.150	-10.000	12.78000	.95850	.21310	-.14310	.21930	-.00240	.03260
36.120	-8.000	12.78000	.96030	.21360	-.11920	.16510	.00240	.02570
36.100	-6.000	12.78000	.97110	.21510	-.11570	.11510	.00490	.01910
36.090	-3.000	12.78000	.96920	.21490	-.09980	.05680	.00450	.00980
36.090	-2.000	12.78000	.97200	.21540	-.09530	.04010	.00350	.00670
36.090	-1.000	12.78000	.97330	.21520	-.09050	.02300	.00330	.00330
36.080	.000	12.78000	.97260	.21470	-.08780	.00800	.00130	.00080
36.080	1.000	12.78000	.97570	.21490	-.08960	-.01060	.00050	-.00300
36.090	2.000	12.78000	.97270	.21500	-.09370	-.02820	-.00050	-.00590
36.090	3.000	12.78000	.97420	.21490	-.09640	-.04520	-.00130	-.01000
36.090	4.000	12.78000	.97590	.21550	-.10390	-.06410	-.00240	-.01280
36.100	6.000	12.78000	.97150	.21470	-.11510	-.10260	-.00220	-.01980
36.120	8.000	12.78000	.96960	.21340	-.11920	-.15310	.00070	-.02600
36.140	10.000	12.78000	.96260	.21200	-.13100	-.20730	.00440	-.03310
36.170	12.000	12.78000	.95590	.21020	-.15760	-.26930	.00830	-.03990
36.210	14.000	12.78000	.94860	.20900	-.18040	-.32530	.00950	-.04690
36.250	16.000	12.78000	.93690	.20650	-.19310	-.38020	.00800	-.05330
36.350	20.000	12.78000	.88570	.19490	-.14460	-.50690	.01060	-.06520
GRADIENT	.00000	.00000	.00070	.00002	.00054	-.01720	-.00098	-.00325

**DATE 15 NOV 75**

TABULATED SOURCE FORCE DATA - C411 ( UNAL1146 )

**PAGE 110**

CA11UWAL1146(EXT)KIH15.1V9.1C1 A786AT87 728.1

(RGO115) ( 14 NOV 75 )

## REFERENCE DATA

SREF	=	9500.0000	50.77.
LREF	=	327.7800	IN.
BREF	=	2348.0000	IN.
SCALE	=	.0400	

XWRP	=	1339.9100	IN.	XC
YWRP	=	.0000	IN.	YC
ZWRP	=	190.7500	IN.	ZC

## PARAMETRIC DATA

ALPHAW	=	12.790	STAB	=	-2.000
ELV-18	=	.000	ELV-08	=	.000
RUD-U	=	.000	RUD-L	=	.000
1TANK	=	.000	RTANK	=	.000

RUN NO.	115/ 0	RN/L =	.00	GRADIENT INTERVAL =	-5.00/ 5.00
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BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
-20.000	12.78000	87920	19340	-13490	51540	-00310	07050
-16.000	12.78000	92990	20700	-16790	37470	00540	05520
-14.000	12.78000	94420	20940	-16420	31520	00540	04790
-12.000	12.78000	95340	21150	-14820	26030	00600	04070
-10.000	12.78000	95160	21150	-13360	20200	00780	03300
-8.000	12.78000	96150	21380	-11490	14830	01200	02630
-6.000	12.78000	96820	21400	-10910	10570	01130	02030
-4.000	12.78000	96800	21370	-09880	06740	00960	01310
-3.000	12.78000	96890	21400	-09230	05250	00740	01010
-2.000	12.78000	96350	21230	-08240	03650	00490	00630
-1.000	12.78000	96550	21310	-07980	02360	00370	00370
.000	12.78000	96520	21210	-07920	.3990	00070	00060
1.000	12.78000	97000	21300	-07910	.00650	00150	00250
2.000	12.78000	96940	21270	-08430	02440	00340	00650
3.000	12.78000	97560	21450	-09170	03790	00620	01010
4.000	12.78000	96580	21270	-09580	05290	00790	01310
6.000	12.78000	96420	21240	10230	09030	01060	01960
8.000	12.78000	96300	21170	11380	13560	01060	02690
10.000	12.78000	95800	21050	12910	1E350	00880	03390
12.000	12.78000	95570	20940	15000	24740	00490	04140
14.000	12.78000	93980	20620	17430	30010	00520	04760
16.000	12.78000	93490	20500	18550	35760	00610	05430
20.000	12.78000	88110	19370	14440	48960	00370	06740
GRADIENT	.00000	.00006	-.00003	.00018	-.01507	-.00320	-.00329

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 111

(RG0116) ( 14 NOV 75 )

CALLUNAL1146EXTKIM15.1V9.1C1 AT86AT87 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

ALPHAH = 6.380 STAB = -2.000  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

PARAMETRIC DATA

RUN NO. 116/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAH	CL	CD	CLM	CY	CLN	CSL
36.260	-20.000	6.37000	.46760	.10580	-.13000	.50530	.00490	.05880
36.150	-16.000	6.37000	.49840	.11340	-.13460	.37200	.00600	.04890
36.110	-14.000	6.37000	.50340	.11650	-.11450	.30950	.00890	.04370
36.070	-12.000	6.37000	.49770	.11800	-.08780	.25350	.00850	.03760
36.040	-10.000	6.37000	.49260	.11960	-.06200	.19690	.01110	.03150
36.020	-8.000	6.37000	.48490	.12050	-.03790	.14660	.01290	.02500
36.010	-6.000	6.37000	.48290	.12060	-.02050	.10290	.01280	.01900
36.000	-4.000	6.37000	.48280	.12050	-.01500	.06760	.01020	.01330
35.990	-3.000	6.37000	.48280	.11990	-.01030	.05180	.00780	.00930
35.990	-2.000	6.37000	.48340	.11990	-.00820	.03370	.00690	.00680
35.990	-1.000	6.37000	.48140	.12030	-.00110	.01630	.00420	.00360
35.990	.000	6.37000	.48420	.12000	.00330	.00120	.00200	.00000
35.990	1.000	6.37000	.48630	.12090	.00270	-.01770	.00010	-.00330
35.990	2.000	6.37000	.48190	.12040	.00010	-.03410	-.00190	-.00630
35.990	3.000	6.37000	.48900	.12120	-.00710	-.05150	-.00400	-.00930
36.000	4.000	6.37000	.48640	.12080	-.01450	-.06810	-.00600	-.01260
36.010	6.000	6.37000	.48390	.12080	-.02810	-.10700	-.00870	-.01870
36.020	8.000	6.37000	.48950	.12040	-.04500	-.15240	-.00800	-.02490
36.050	10.000	6.37000	.49350	.12070	-.06560	-.20740	-.00490	-.03190
36.070	12.000	6.37000	.49550	.11870	-.08840	-.26020	-.00300	-.03720
36.110	14.000	6.37000	.49650	.11700	-.12110	-.31400	-.00240	-.04250
36.150	16.000	6.37000	.49300	.11420	-.14250	-.37430	-.00290	-.04680
36.250	20.000	6.37000	.46990	.10370	-.13440	-.49080	-.00410	-.05670
GRADIENT		.00000	.00058	.00011	.00053	-.01704	-.00200	-.00323

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OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA11 ( UMAL1146 )

PAGE 112

( RGO117 ) ( 14 NOV 75 )

CA11UMAL1146(EXT)K1415.1V9.1C1 AT86AT87 T28.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

## PARAMETRIC DATA

ALPHAM = 2.080 STAB = -2.000  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 117/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.240	-20.000	2.08000	.18170	.08370	-.08970	.50700	.00230	.04990
36.140	-16.000	2.08000	.17840	.09290	-.05090	.38300	.00240	.04210
36.100	-14.000	2.08000	.16920	.09660	-.02530	.32120	.00430	.03690
36.060	-12.000	2.08000	.15750	.10000	-.00100	.26340	.00710	.03080
36.030	-10.000	2.08000	.14360	.10170	.02050	.20310	.01050	.02530
36.010	-8.000	2.08000	.13790	.10240	.03350	.15240	.01240	.01970
36.000	-6.000	2.08000	.13640	.10260	.04340	.10880	.01120	.01410
35.990	-4.000	2.08000	.13240	.10480	.05620	.07160	.00890	.00960
35.990	-3.000	2.08000	.12920	.10600	.08110	.05300	.00690	.00810
35.990	-2.000	2.08000	.12470	.10630	.08320	.03340	.00550	.00540
35.990	-1.000	2.08000	.12430	.10670	.09430	.01840	.00390	.00240
35.990	.000	2.08000	.11980	.10620	.09480	-.00430	.00260	.00000
35.990	1.000	2.08000	.12320	.10630	.09050	-.02380	.00100	-.00210
35.990	2.000	2.08000	.12530	.10610	.08480	-.04370	.00010	-.00410
35.990	3.000	2.08000	.12870	.10580	.07700	-.06220	.00180	-.00700
35.990	4.000	2.08000	.13210	.10580	.06910	-.07830	.00330	-.00910
36.000	6.000	2.08000	.13530	.10300	.04200	-.11720	.00610	-.01350
36.010	8.000	2.08000	.13770	.10170	.02880	-.15950	.00640	-.01840
36.040	10.000	2.08000	.14150	.10080	.01230	-.21390	.00360	-.02460
36.070	12.000	2.08000	.15350	.09890	-.00990	-.27200	.00040	-.03040
36.100	14.000	2.08000	.15860	.09560	-.03370	-.33200	.00150	-.03540
36.140	16.000	2.08000	.16340	.09130	-.05910	-.38770	.00160	-.04020
36.240	20.000	2.08000	.15710	.08220	-.08020	-.49990	.00150	-.04640
GRADIENT		-.00000	-.00004	.00004	-.00022	-.01899	-.00148	-.00239

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 113

( R00118 ) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHAN = 2.080 STAB = -2.000  
ELV-18 = .000 ELV-09 = .000  
ITANK = .000 RTANK = .000

RUN NO. 119/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAN	CL	CD	CLM	CY	CLN	CSL
36.190	-20.000	2.08000	.17800	.09250	-.09470	.39030	.05460	.03850
36.100	-16.000	2.08000	.17560	.09950	-.05350	.28920	.04480	.03200
36.080	-14.000	2.08000	.16720	.10290	-.02630	.24300	.03990	.02840
36.050	-12.000	2.08000	.15440	.10380	.00220	.19960	.03520	.02400
36.030	-10.000	2.08000	.13900	.10430	.02110	.15850	.03030	.02080
36.010	-8.000	2.08000	.13350	.10430	.03960	.12400	.02540	.01660
35.990	-6.000	2.08000	.12670	.10350	.05810	.08840	.01970	.01290
35.990	-4.000	2.08000	.12160	.10540	.08520	.05920	.01390	.00920
35.990	-3.000	2.08000	.11650	.10590	.10100	.04400	.01100	.00670
35.990	-2.000	2.08000	.11460	.10590	.10730	.02720	.00760	.00530
35.990	-1.000	2.08000	.11290	.10610	.11250	.01340	.00440	.00290
35.990	.000	2.08000	.11320	.10570	.11320	-.00050	.00120	.00110
35.990	1.000	2.08000	.11470	.10610	.10940	-.01470	-.00250	-.00070
35.990	2.000	2.08000	.11560	.10610	.10330	-.02900	-.00590	-.00310
35.990	3.000	2.08000	.11750	.10570	.09410	-.04410	-.00920	-.00480
35.990	4.000	2.08000	.12370	.10530	.08280	-.05830	-.01240	-.00700
36.000	6.000	2.08000	.12800	.1050	.05680	-.08730	-.01850	-.01110
36.010	8.000	2.08000	.13300	.10380	.03790	-.12090	-.02450	-.01460
36.020	10.000	2.08000	.13760	.10410	.02140	-.15550	-.03000	-.01820
36.050	12.000	2.08000	.14820	.10290	-.00740	-.19680	-.03540	-.02200
36.070	14.000	2.08000	.15460	.10060	-.03470	-.23710	-.04050	-.02560
36.100	16.000	2.08000	.16240	.09840	-.05540	-.28270	-.04570	-.02850
36.100	20.000	2.08000	.15300	.09010	-.08580	-.38420	-.05540	-.03310
36.180	GRADIENT	-.00000	.00025	-.00001	-.00069	-.01458	-.00333	-.00199

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 114

(R00119) ( 14 NOV 75 )

CALLUVAL1146(EXT)KIH15.1 CI A786AT87 128.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

## PARAMETRIC DATA

ALPHAH = 6.380 STAB = -2.000  
ELV-IB = .000 ELV-OB = .000  
ITANK = .000 RTANK = .000

RUN NO. 119/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAH	CL	CD	CLN	CY	CLN	CSL
36.210	-20.000	6.37000	.47260	.11290	-.14580	.40000	.05370	.05270
36.120	-16.000	6.37000	.50280	.12030	-.13020	.28990	.04560	.04360
36.080	-14.000	6.37000	.49880	.12170	-.11440	.23320	.04070	.03890
36.060	-12.000	6.37000	.49320	.12280	-.08540	.19470	.03580	.03380
36.030	-10.000	6.37000	.49220	.12290	-.05330	.15340	.03110	.02930
36.020	-8.000	6.37000	.48560	.12170	-.03560	.11740	.02610	.02420
36.000	-6.000	6.37000	.47900	.12040	-.01340	.08560	.02020	.01890
35.990	-4.000	6.37000	.47840	.11950	-.00020	.05750	.01460	.01340
35.990	-3.000	6.37000	.47960	.11930	.00600	.04370	.01110	.01030
35.990	-2.000	6.38000	.47680	.11960	.01190	.02920	.00730	.00710
35.990	-1.000	6.38000	.47860	.11960	.01630	.01780	.00390	.00410
35.990	.000	6.38000	.47410	.11890	.02220	.00230	.00060	.00090
35.990	1.000	6.38000	.47760	.11910	.01950	-.01170	-.00270	-.00220
35.990	2.000	6.38000	.47980	.12020	.01670	.02600	-.00620	-.00610
35.990	3.000	6.37000	.47530	.11980	.00950	-.04030	-.00950	-.00830
35.990	4.000	6.37000	.47710	.12030	.01010	-.05140	-.01300	-.01120
36.000	6.000	6.37000	.48040	.12070	-.01540	-.07990	-.01960	-.01700
36.020	8.000	6.37000	.48490	.12180	-.03300	-.11310	-.02550	-.02220
36.030	10.000	6.37000	.48940	.12250	-.06150	-.14730	-.03120	-.02750
36.050	12.000	6.37000	.49160	.12280	-.09010	-.18560	-.03640	-.03220
36.080	14.000	6.37000	.49940	.12110	-.11910	-.22920	-.04200	-.03690
36.110	16.000	6.37000	.49010	.11880	-.14520	-.27470	-.04710	-.04000
36.150	20.000	6.37000	.46690	.10980	-.14630	-.37900	-.05560	-.04840
	GRADIENT	.00000	-.00022	.00006	.00041	-.01379	-.00343	-.00311

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UAL1146 )

PAGE 115

CALL UAL1146(EXT)K1H15.1 C1 AT86AT87 T28.1

(RG0120) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

ALPHAM = 12.790 STAB = -2.000  
 ELV-IB = .000 ELV-OB = .000  
 ITANK = .000 RTANK = .000

PARAMETRIC DATA

RUN NO. 120/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHAM	CL	CD	CLM	CY	CLN	CSL
36.310	-20.000	12.78000	.88730	.20120	-.14760	.42310	.04660	.07050
36.220	-16.000	12.78000	.93090	.21290	-.17210	.30430	.04060	.05560
36.190	-14.000	12.78000	.94640	.21700	-.15960	.25000	.03660	.04780
36.160	-12.000	12.78000	.94870	.21710	-.13830	.20050	.03300	.04100
36.130	-10.000	12.78000	.94310	.21560	-.11970	.15640	.02870	.03460
36.110	-8.000	12.78000	.96010	.21530	-.08890	.11910	.02470	.02700
36.100	-6.000	12.78000	.95770	.21310	-.09340	.08470	.01970	.01990
36.030	-4.000	12.78000	.95880	.21190	-.08130	.05700	.01410	.01390
36.080	-3.000	12.78000	.95380	.21170	-.07320	.04330	.01070	.01040
36.080	-2.000	12.78000	.96420	.21210	-.06530	.03130	.00700	.00720
36.080	-1.000	12.78000	.96510	.21240	-.06130	.02080	.00330	.00360
36.080	.000	12.78000	.96740	.21190	-.05770	.01050	.00040	.00070
36.080	1.000	12.78000	.96680	.21170	-.05950	-.00170	-.00420	-.00280
36.080	2.000	12.78000	.96860	.21240	-.06330	-.01410	-.00820	-.00650
36.080	3.000	12.78000	.96830	.21260	-.07090	-.02390	-.01150	-.00970
36.090	4.000	12.78000	.96660	.21280	-.07950	-.03340	-.01500	-.01320
36.100	6.000	12.78000	.96820	.21450	-.08230	-.06250	-.02110	-.02020
36.100	8.000	12.78000	.96600	.21340	-.09450	-.09330	-.02620	-.02670
36.120	10.000	12.78000	.96640	.21350	-.10970	-.13580	-.03120	-.03340
36.140	12.000	12.78000	.94890	.21280	-.13580	-.17710	-.03560	-.04010
36.170	14.000	12.78000	.94280	.21240	-.16640	-.22470	-.04010	-.04730
36.200	16.000	12.78000	.93190	.20950	-.18010	-.27430	-.04110	-.05350
36.280	20.000	12.78000	.88560	.19810	-.16270	-.38360	-.05060	-.05610
	GRADIENT	.00000	.00110	.00010	.00033	-.01161	-.00368	-.00337

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TABULATED SOURCE FORCE DATA - CA11 ( UNAL1146 )

PAGE 116

(RGO121) ( 14 NOV 75 )

CA11UNAL1146(EXT)K1 V9.1C1 AT86AT87 T29.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2349.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

BETA = .000 RUD-U = .000  
RUD-L = .000 ITANK = .000  
RTANK = .000

RUN NO. 121/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

O	ALPHA	BETA	CL	CD	CLM	CY	CLN	CSL
36.030	-4.470	.00000	-40290	-13893	-.01190	-.00390	.00220	.00060
36.010	-2.280	.00000	-22470	-11700	.01450	-.00400	.00220	.00030
35.990	-.100	.00000	-.04450	.10710	.03600	-.00300	.00240	.00100
35.990	2.060	.00000	.12440	.10530	.06350	-.00140	.00250	.00070
35.990	4.210	.00000	.28560	.10770	.08040	-.00060	.00240	.00150
35.990	6.360	.00000	.44860	.11590	.09180	.00010	.00210	.00120
36.000	8.510	.00000	.61330	.12960	.11570	.00200	.00220	.00070
36.020	10.650	.00000	.75160	.15450	.15350	.00470	.00170	.00040
36.070	12.780	.00000	.89110	.19710	.18400	.00720	.00160	.00070
36.150	14.890	.00000	.00540	.25570	.20680	.00630	.00150	.00140
36.260	16.960	.00000	1.10770	.32860	.24750	.00520	.00170	.00110
36.370	18.970	.00000	1.17990	.40020	.26100	.01630	.00047	.00120
36.490	20.950	.00000	1.20510	.46810	.29570	.02140	-.00050	.00100
36.610	23.010	.00000	1.24950	.53960	.31660	.02410	-.00160	.00270
36.720	25.060	.00000	1.27620	.60480	.32800	.02360	-.00270	.00270
GRADIENT		.00000	.07955	-.00312	.01077	.00042	.00003	.00007

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 117

(RG0122) ( 14 NOV 75 )

CALLUHAL1146(EXT)KIH15.1V9.1C2 AT86AT87 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
LREF = 327.7800 IN. YMRP = .0000 IN. YC  
SREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -2.000  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 122/ 0 RV/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.260	-20.000	6.37000	.47340	.10580	-.14540	.50080	.00660	.05920
36.160	-16.000	6.37000	.49890	.11440	-.13520	.37360	.00690	.04920
36.110	-14.100	6.37000	.49700	.11570	-.11440	.31250	.00770	.04330
36.080	-12.000	6.37000	.49450	.11820	-.08810	.25420	.00910	.03790
36.050	-10.000	6.37000	.49160	.11970	-.06370	.19740	.01090	.03130
36.030	-8.000	6.37000	.48420	.11390	-.04300	.14630	.01330	.02510
36.010	-6.000	6.37000	.48540	.12070	-.02430	.10470	.01270	.01960
36.000	-4.000	6.37000	.48090	.12010	-.01640	.06690	.01010	.01310
36.000	-3.000	6.37000	.48080	.12010	-.01110	.05050	.00780	.01030
36.000	-2.000	6.37000	.48230	.11960	-.00720	.03350	.00590	.00700
36.000	-1.000	6.37000	.48200	.12010	-.00190	.01760	.00410	.00400
36.000	.000	6.37000	.48510	.12020	.00110	-.00100	.00190	-.00020
36.000	1.000	6.37000	.47930	.11970	.00170	-.01810	-.00010	-.00290
36.000	2.000	6.37000	.48330	.12020	.00040	-.03680	.00180	-.00620
36.000	3.000	6.37000	.48510	.12050	-.00900	-.05260	.00410	-.00910
36.000	4.000	6.37000	.48160	.12000	-.01740	-.06850	.00600	-.01230
36.010	5.000	6.37000	.48670	.12130	-.02730	-.10690	.00890	-.01840
36.030	6.000	6.37000	.48790	.12030	-.04290	-.15220	.00840	-.02470
36.050	8.000	6.37000	.48990	.11980	-.06780	-.20610	.00490	-.03150
36.080	10.000	6.37000	.49160	.11800	-.09100	-.25680	.00300	-.03730
36.110	12.000	6.37000	.49460	.11490	-.11870	-.30660	.00250	-.04180
36.150	14.000	6.37000	.49140	.11340	-.14850	-.37130	.00380	-.04670
36.250	16.000	6.37000	.46390	.10320	-.14230	-.46850	.00570	-.05600
	20.000	6.37000	.00026	.00003	.00035	-.01712	.00199	-.00322
	GRADIENT	.00000						

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 118

CALL UHAL1146(EXT)KIH15.6V9.1C2 AT36AT87 T28.1

(RUC123) ( 14 NOV 75 )

# REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7800 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

ALPHA = 6.380 STAB = -2.000  
 ELV-IB = .000 ELV-OB = .000  
 RUO-U = .000 RUO-L = .000  
 ITANK = .000 RTANK = .000

# PARAMETRIC DATA

RUN NO. 123/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

O	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
35.280	-20.000	6.37000	.45700	.10680	-.10730	.52760	-.00910	.05790
36.170	-16.000	6.37000	.49280	.11290	-.11190	.39950	-.01020	.04920
36.120	-14.000	6.37000	.49730	.11530	-.10210	.33860	-.00990	.04400
36.090	-12.000	6.37000	.49850	.11780	-.08510	.28090	-.00690	.03830
36.060	-10.000	6.37000	.49850	.12050	-.06410	.2238	-.00320	.03220
36.030	-8.000	6.37000	.49070	.12040	-.04760	.16650	.00140	.02590
36.010	-6.000	6.37000	.48390	.12050	-.02660	.11760	.00400	.01940
35.000	-4.000	6.37000	.48540	.12110	-.02050	.07720	.00470	.01370
36.000	-3.000	6.37000	.48440	.12110	-.01450	.05740	.00410	.01030
36.000	-2.000	6.37000	.48740	.12150	-.01380	.03770	.00350	.00720
36.000	-1.000	6.37000	.48260	.12120	-.00380	.01800	.00330	.00350
35.000	.000	6.37000	.48220	.12120	-.00110	-.00070	.00300	.00010
36.000	1.000	6.37000	.48240	.12150	-.00330	-.02100	.00250	-.00310
36.000	2.000	6.37000	.48740	.12150	-.00560	-.04180	.00220	-.00640
36.000	3.000	6.37000	.48790	.12190	-.01210	-.06000	.00140	-.01020
36.010	4.000	6.37000	.48300	.12180	-.02000	-.08100	.00140	-.01310
36.020	6.000	6.37000	.48390	.12140	-.03300	-.12380	.00180	-.01930
36.030	8.000	6.37000	.48950	.12040	-.04870	-.17180	.00490	-.02550
36.050	10.000	6.37000	.48960	.11960	-.06610	-.22900	.01050	-.03210
36.090	12.000	6.37000	.49100	.11900	-.07910	-.28650	.01470	-.03790
36.130	14.000	6.37000	.48880	.11560	-.09850	-.34250	.01650	-.04230
36.170	16.000	6.37000	.48320	.11350	-.11920	-.39820	.01630	-.04620
36.270	20.000	6.37000	.45600	.10520	-.10630	-.51660	.01200	-.05530
GRADIENT		.00000	.00001	.00009	.00043	-.01972	-.00041	-.00337

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TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 119

CALL UVAL1146(EXT)KIH15.6V9.1C2V11 AT86AT87 T28.1

(R00124) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1339.9100 IN. XC  
 LREF = 327.7600 IN. YMRP = .0000 IN. YC  
 BREF = 2348.0000 IN. ZMRP = 190.7500 IN. ZC  
 SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.380 STAB = -2.000  
 ELV-18 = .001 ELV-08 = .000  
 RUD-U = .000 RUD-L = .000  
 ITANK = .000 RTANK = .000

RUN NO. 124/ 0 RM/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

O	BETA	ALPHA	CL	CD	CLM	CY	CLN	CSL
36.330	-20.000	6.37000	.46460	.11270	-.09860	.59030	-.04920	.06850
36.210	-16.000	6.37000	.48970	.12040	-.10840	.45970	-.04600	.05830
36.160	-14.000	6.37000	.49350	.12190	-.09810	.38990	-.04080	.05180
36.110	-12.000	6.37000	.49400	.12470	-.07600	.32300	-.03420	.04500
36.080	-10.000	6.37000	.49850	.12690	-.05760	.25880	-.02620	.03790
36.050	-8.000	6.37000	.48080	.12710	-.03680	.19860	-.01850	.03090
36.030	-6.000	6.37000	.48250	.12810	-.01930	.14300	-.01120	.02320
36.020	-4.000	6.37000	.48170	.12950	-.01050	.09560	-.00580	.01600
36.010	-3.000	6.37000	.47930	.12870	-.00640	.07010	-.00330	.01220
36.010	-2.000	6.37000	.48270	.12880	-.00270	.04750	-.00150	.00800
36.010	-1.000	6.37000	.48130	.12910	-.00320	.02570	.00000	.00400
36.010	.000	6.37000	.48440	.12930	.00590	.00260	.00300	.00050
36.010	1.000	6.37000	.48360	.12950	.00510	-.02280	.00130	-.00340
36.010	2.000	6.37000	.48160	.12880	.00330	-.04550	.00500	-.00770
36.020	3.000	6.37000	.48390	.13000	-.00310	-.06800	.00690	-.01160
36.020	4.000	6.37000	.48430	.12900	-.01230	-.09580	.01020	-.01580
36.030	6.000	6.37000	.48580	.12810	-.04920	-.14670	.01600	-.02330
36.050	8.000	6.37000	.48820	.12590	-.04870	-.20110	.02260	-.03030
36.080	10.000	6.37000	.49010	.12510	-.06770	-.26220	.03170	-.03810
36.110	12.000	6.37000	.49290	.12290	-.08140	-.32460	.03950	-.04520
36.160	14.000	6.37000	.49260	.12130	-.09610	-.39070	.04640	-.05100
36.210	16.000	6.37000	.47770	.11860	-.11070	-.45580	.05220	-.05580
36.320	20.000	6.37000	.45580	.11000	-.10340	-.58050	.05230	-.06530
GRADIENT		.00000	.00040	.00009	.00028	-.02364	.00184	-.00396

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TABULATED SOURCE FORCE DATA - CALL ( UHALL146 )

PAGE 129

CALL UHALL146(EXTIK)H15.6V9.1CEV10 AT86AT87 T28.1

(RG0125) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7000 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1339.9100 IN. XC  
YMRP = .0000 IN. YC  
ZMRP = 190.7500 IN. ZC

PARAMETRIC DATA

ALPHAH = 6.380 STAB = -2.000  
ELV-1B = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 125/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

BETA	ALPHAH	CL	CD	CLM	CY	CLN	CSL
0							
36.190	6.37000	.49440	.11290	-.11470	.43830	-.03460	.05460
36.140	6.37000	.49940	.11550	-.10310	.37650	-.03130	.04870
36.100	6.37000	.50440	.11870	-.08830	.31120	-.02600	.04290
36.060	6.37000	.49420	.11960	-.06660	.24770	-.01980	.03630
36.040	6.37000	.49280	.12090	-.04600	.19090	-.01330	.02940
36.020	6.37000	.48910	.12070	-.03000	.13820	-.00720	.02260
36.010	6.37000	.48740	.12210	-.02320	.09210	-.00320	.01560
36.000	6.37000	.48850	.12190	-.01590	.06750	-.00150	.01150
36.000	6.37000	.48650	.12200	-.01030	.04520	-.00010	.00820
37.000	6.37000	.48640	.12330	-.00520	.02300	.00150	.00390
36.000	6.37000	.48690	.12270	-.00290	.00050	.00230	.00000
36.000	6.37000	.48710	.12230	-.00440	-.02410	.00370	-.00340
36.000	6.37000	.48790	.12240	-.00570	.00520	.00520	.00580
36.000	6.37000	.48940	.12250	-.01200	-.06800	.00630	.01060
36.010	6.37000	.48640	.12160	-.02030	-.05010	.00790	.01430
36.020	6.37000	.49040	.12120	-.03600	-.14110	.01270	.02210
36.040	6.37000	.49430	.12000	-.05270	-.19680	.01870	.02920
36.070	6.37000	.49690	.11970	-.07080	-.25420	.02610	.03620
36.100	6.37000	.49510	.11730	-.08500	-.31030	.03130	.04200
36.140	6.37000	.49820	.11570	-.10570	-.37490	.03690	.04770
36.190	6.37000	.49120	.11350	-.12410	-.43690	.04010	.05230
36.300	6.37000	.45950	.10520	-.10430	-.56100	.03930	.06170
GRADIENT	.00000	.00000	.00001	.00035	-.02272	.00134	-.00372

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TABULATED SOURCE FORCE DATA - CALL ( UJAL1146 )

PAGE 121

JAL11UJAL1146 (INT)KI V9.1 A170AT71 128.1 (AG0072) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
LREF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

BETA = .000 RUD-U = .000  
RUD-L = .000 ITANK = .000  
RTANK = .000

PARAMETRIC DATA

RUN NO. 72/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	CNT	CAT	CLMT	CYT	CYNT	CBLT	BETA	ALPHAT	DPI
35.970	-4.450	-0.0960	.02950	-.04900	-.00210	-.00030	-.00010	.00000	-6.50570	-.65870
35.940	-2.270	-.01000	.03060	-.03960	.00180	.00050	-.00010	.00000	-4.31040	-.66020
35.930	-.090	-.00820	.03000	-.02530	.00040	.00010	.00000	.00000	-2.11070	-.67210
35.930	2.060	-.00370	.02900	-.01100	-.00120	.00000	.00000	.00000	.04700	-.58280
35.930	4.210	-.00390	.02860	-.00050	.00100	.00020	.00010	.00000	2.20310	-.69160
35.930	6.360	-.00010	.02780	.01440	.00240	.00010	.00000	.00000	4.38230	-.71500
35.940	8.500	.00010	.02700	.03030	.00160	.00030	.00010	.00000	6.54700	-.71960
35.960	10.630	.00500	.02580	.04670	.00250	.00000	.00010	.00000	8.69640	-.71340
36.010	12.760	.00810	.02540	.06110	.00660	.00030	.00010	.00000	10.83520	-.72950
36.090	14.880	.01110	.02440	.07280	.00830	.00040	.00000	.00000	12.97020	-.74770
36.200	16.940	.01510	.02330	.08610	.00940	.00050	.00000	.00000	15.05680	-.77150
36.310	18.950	.01710	.02260	.09690	.01000	.00050	.00000	.00000	17.07150	-.78270
36.410	20.910	.02530	.02540	.11480	.01050	.00010	.00000	.00000	19.06130	-.79300
36.510	22.950	.02850	.02050	.12540	.00730	.00060	.00000	.00000	21.11440	-.79850
36.610	24.990	.03580	.01930	.13880	.01160	.00070	.00000	.00000	23.15830	-.80110
GRADIENT		.00082	-.00019	.00580	.00015	.00002	.00002	.00000	1.00580	-.00408

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TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 122

CALLUMAL1146 (INT)KIH15.1 AT70AT71 T28.1 (AG0073) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1348.0000 IN. XT  
YMRP = .0000 IN. YT  
ZMRP = 402.0000 IN. ZT

PARAMETRIC DATA

ALPHAM = 6.000 STAB = -1.930  
ELV-18 = .000 ELV-08 = .000  
ITANK = .000 RTANK = .000

RUN NO. 73/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	CNT	CAT	CLMT	CYT	CYNT	CBLT	ALPHAM	ALPHAT	DPI
35.150	-20.000	-.03290	.02520	.01120	.12850	.02690	.00100	6.37000	4.41800	-.45310
36.050	-16.000	-.01940	.02900	.00780	.08290	.02320	.00050	6.37000	4.40010	-.56780
36.030	-14.000	-.01530	.03060	.01250	.06280	.02100	.00050	6.37000	4.40360	-.57310
36.000	-12.000	-.00860	.03140	.01740	.04630	.01900	.00040	6.37000	4.40470	-.56190
35.980	-10.000	-.00790	.03070	.01690	.03060	.01650	.00040	6.38000	4.40330	-.56220
35.950	-8.000	-.00170	.02990	.01750	.02540	.01400	.00030	6.38000	4.39840	-.56450
35.950	-6.000	-.00020	.03000	.01910	.01290	.01000	.00020	6.38000	4.39940	-.57820
35.950	-4.000	-.00250	.02970	.01580	.00700	.00660	.00010	6.38000	4.39650	-.57830
35.940	-3.000	-.00210	.02920	.01660	.00610	.00500	.00020	6.38000	4.39740	-.56770
35.940	-2.000	-.00130	.02910	.01950	.00300	.00320	.00010	6.38000	4.39870	-.57160
35.930	-1.000	-.00150	.02880	.01860	.00600	.00150	.00010	6.38000	4.39710	-.57180
35.930	.000	-.00070	.02890	.01530	.00130	-.00050	.00000	6.38000	4.39420	-.57370
35.940	1.000	-.00050	.02876	.01360	.00040	-.00200	.00000	6.38000	4.39140	-.55990
35.940	2.000	-.00110	.02860	.01280	.00230	-.00370	.00000	6.38000	4.39070	-.55020
35.940	3.000	-.00130	.02840	.01720	-.00350	-.00550	.00000	6.38000	4.39520	-.55600
35.950	4.000	-.00040	.02870	.01770	-.00630	-.00750	.00000	6.38000	4.39750	-.54710
35.950	6.000	.00510	.02930	.02300	-.00990	-.01070	.00010	6.38000	4.40520	-.55200
35.960	8.000	.00510	.02960	.02440	-.02120	-.01430	.00020	6.38000	4.41210	-.52170
35.980	10.000	-.01120	.02990	.02190	-.02950	-.01660	.00030	6.38000	4.41400	-.50090
36.000	12.000	-.01600	.03000	.02560	-.04330	-.01940	.00040	6.37000	4.42410	-.47730
36.020	14.000	-.02340	.02890	.02130	-.05820	-.02170	.00050	6.37000	4.42440	-.46250
36.050	16.000	-.03100	.02780	.01620	-.07610	-.02410	.00060	6.37000	4.42380	-.47570
36.130	20.000	-.05150	.02350	.01380	-.11390	-.02760	.00070	6.37000	4.43940	-.48430
	GRADIENT	.00020	-.00013	-.00015	-.00164	-.00175	-.00002	.00000	-.00041	.00350

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 123

CALLUVAL1146(INT)KIH15.7V9.4 AT70ATT1 T28.1 (AG0077) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
LREF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

PARAMETRIC DATA

ALPHAM = 2.000 STAB = -1.930  
ELV-IB = .000 ELV-OB = .000  
RUD-L = .000 RUD-R = .000  
ITANK = .000 RTANK = .000

RUN NO. 77/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	CNT	CAT	CLMT	CYT	CYNT	CBLT	ALPHAM	ALPHAT	OPI
36.230	-20.000	-.05430	.02580	-.01150	.13620	.02430	.00100	2.08000	.10350	-.60670
36.110	-16.000	-.03260	.02880	-.00990	.09390	.02120	.00060	2.08000	.08560	-.61550
36.060	-14.000	-.02400	.03000	-.01120	.07000	.01320	.00050	2.08000	.07560	-.62600
36.020	-11.900	-.01800	.02970	-.01400	.05160	.01680	.00050	2.08000	.06570	-.62180
35.990	-10.000	-.01020	.02810	-.01030	.04110	.01460	.00030	2.08000	.06410	-.62330
35.970	-8.000	-.00870	.02790	-.01250	.02650	.01160	.00030	2.08000	.05920	-.63240
35.960	-6.000	-.00410	.02890	-.00890	.01810	.00910	.00030	2.08000	.05050	-.63850
35.940	-4.000	-.00320	.02960	-.01030	.01030	.00610	.00020	2.08000	.05760	-.63590
35.940	-3.000	-.00630	.02860	-.01270	.01030	.00480	.00020	2.08000	.05690	-.62910
35.940	-2.000	-.00360	.02870	-.01020	.00440	.00280	.00020	2.08000	.05970	-.62320
35.940	-1.000	-.00520	.02910	-.01010	.00350	.00110	.00010	2.08000	.05760	-.62130
35.940	.000	-.00400	.02890	-.01080	.00150	-.00060	.00000	2.08000	.05690	-.61150
35.940	1.000	-.00470	.02900	-.01170	-.00220	-.00250	.00000	2.08000	.05400	-.60570
35.940	2.000	-.00460	.02900	-.01350	-.00700	-.00400	.00000	2.08000	.05490	-.59790
35.940	2.900	-.00400	.02910	-.01250	-.01000	-.00590	.00000	2.08000	.05720	-.59970
35.950	4.000	-.00490	.02950	-.01160	-.01120	-.00730	-.00010	2.08000	.05920	-.60340
35.960	6.000	-.00850	.03050	-.01250	-.01970	-.01070	-.00020	2.08000	.06490	-.61490
35.970	8.000	-.00980	.03110	-.00950	-.03040	-.01340	-.00020	2.08000	.07800	-.63790
35.990	10.000	-.01440	.03200	-.00370	-.04370	-.01590	-.00040	2.08000	.08960	-.63140
36.030	12.000	-.02390	.03180	-.00190	-.05890	-.01830	-.00040	2.08000	.09860	-.63360
36.070	14.000	-.03270	.03120	-.00140	-.07430	-.02020	-.00040	2.08000	.10330	-.64070
36.110	16.000	-.04260	.03010	-.00440	-.09450	-.02220	-.00060	2.08000	.10330	-.63080
36.230	20.000	-.07620	.02690	-.00470	-.13970	-.02600	-.00080	2.08000	.13440	-.60531
GRADIENT		-.00002	.00003	-.00021	-.00294	-.00172	-.00004	-.00000	-.00031	

ORIGINAL PAGE IS  
OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 124

( AG0078 ) ( 14 NOV 75 )

CALLUHAL1146(INT)KIH15.7V9.4 AT70AT71 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
LREF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

PARAMETRIC DATA

ALPHAM = 5.000 STAB = -1.930  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 78/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	CNT	CAT	CLMT	CYT	CYNT	CBLT	ALPHAW	ALPHAT	DPI
35.240	-20.000	-.02850	.02530	.01600	.14220	.02320	.00090	6.37000	4.42170	-.60550
35.120	-16.000	-.01500	.03070	.02000	.09290	.02040	.00070	6.37000	4.41510	-.63180
35.070	-14.000	-.00840	.03120	.02080	.07370	.01910	.00050	6.37000	4.41010	-.63360
35.030	-12.000	-.00880	.03180	.01600	.05190	.01700	.00050	6.37000	4.40310	-.64300
35.000	-10.000	-.00110	.03030	.01440	.04000	.01480	.00040	6.37000	4.39350	-.64550
35.980	-8.000	-.00070	.03050	.01650	.02750	.01210	.00030	6.38000	4.39640	-.64100
35.960	-6.000	-.00250	.02880	.01300	.02080	.00930	.00020	6.38000	4.39260	-.63460
35.950	-4.000	-.00010	.02990	.01460	.01080	.00610	.00020	6.38000	4.39280	-.63960
35.940	-3.000	-.00040	.02930	.01710	.00740	.00460	.00020	6.38000	4.39690	-.62820
35.940	-2.000	-.00210	.02340	.01670	.00850	.00330	.00020	6.38000	4.39770	-.62620
35.940	-1.000	-.00070	.02870	.01480	.00280	.00110	.00010	6.38000	4.39240	-.62230
35.940	.000	-.00190	.02850	.01520	.00130	-.00050	.00000	6.38000	4.39540	-.62030
35.940	1.000	-.00140	.02850	.01810	-.00070	-.00220	.00010	6.38000	4.39930	-.61350
35.940	2.000	-.00020	.02850	.01380	-.00340	-.00380	.00000	6.38000	4.39130	-.60280
35.950	3.000	.00370	.02900	.01690	-.00500	-.00540	.00000	6.38000	4.39280	-.59680
35.950	4.000	.00090	.02930	.01550	-.00910	-.00740	.00000	6.38000	4.39330	-.59000
35.960	6.000	.00050	.02980	.01980	-.01730	-.01050	.00010	6.38000	4.40010	-.59470
35.980	8.100	-.00270	.03110	.02120	-.02650	-.01330	.00020	6.38000	4.40520	-.59720
35.000	10.000	-.00690	.03200	.02130	-.03600	-.01580	.00030	6.37000	4.40940	-.59980
36.030	12.000	-.01160	.03240	.02350	-.04890	-.01770	.00030	6.37000	4.41710	-.60030
36.070	14.000	-.02510	.03150	.01750	-.06860	-.02020	.00050	6.37000	4.42070	-.59380
36.120	16.000	-.03420	.02960	.01620	-.08990	-.02220	.00060	6.37000	4.42720	-.60460
36.200	20.000	-.06050	.02580	.01500	-.13520	-.02560	.00070	6.37000	4.45010	-.62790
GRADIENT		.00031	-.00005	.00001	-.00240	-.00169	.00003	.00000	-.00027	.00570

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 125

( AC00079 ) ( 14 NOV 75 )

CALLUMAL1146 (INT)K1H15.7V9.4 AT70AT71 T28.1

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT STAB = -1.930  
LREF = 327.7800 IN. YMRP = .0000 IN. YT ELV-OB = .000  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT RUO-L = .000  
SCALE = .0400 ITANK = .000 RTANK = .000

PARAMETRIC DATA

RUN NO. 79/ C RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

0	BETA	CNT	CAT	CLMT	CYT	CYNT	CBLT	ALPHAT	DPI
36.340	-20.000	.02630	.02510	.05930	.15230	.02180	.00100	10.98630	-60960
36.220	-16.000	.00850	.02860	.05500	.10150	.01880	.00080	10.87310	-60880
36.170	-14.000	.00150	.02950	.06350	.07760	.01740	.00050	10.86510	-62800
35.120	-12.000	.00220	.02910	.06270	.05990	.01590	.00040	10.86420	-62980
36.090	-10.000	.00420	.02860	.06020	.04620	.01410	.00030	10.85860	-63520
36.070	-8.000	.00610	.02800	.06070	.03300	.01150	.00020	10.85750	-63750
36.050	-6.000	.00570	.02830	.06060	.02080	.00870	.00020	10.85770	-64270
36.040	-4.000	.00570	.02730	.06090	.01790	.00640	.00020	10.85710	-63610
36.030	-3.000	.00870	.02790	.06450	.01150	.00420	.00010	10.86070	-64110
36.030	-2.000	.00460	.02750	.06350	.01200	.00310	.00020	10.86330	-64400
36.030	-1.000	.00590	.02710	.06120	.00960	.00170	.00010	10.85840	-63920
36.030	.000	.00530	.02750	.06250	.00530	.00010	.00010	10.86090	-64400
36.030	1.000	.00560	.02710	.06040	.00450	.00190	.00010	10.85740	-64210
36.030	2.000	.00910	.02790	.06390	.00320	.00350	.00010	10.85930	-67510
36.030	3.000	.01120	.02810	.06340	.00320	.00500	.00000	10.85680	-65960
36.030	4.000	.00340	.02800	.06300	.00350	.00640	.00000	10.85780	-65860
36.040	6.000	.01100	.02850	.06420	.01090	.00940	.00000	10.85830	-65160
36.060	8.000	.00610	.02900	.06310	.02360	.01190	.00010	10.86140	-64540
36.080	10.000	.00290	.02940	.06530	.03670	.01460	.00020	10.86750	-64020
36.110	12.000	.00070	.02980	.06510	.05480	.01720	.00030	10.87060	-63480
36.150	14.000	.01480	.02970	.07130	.07000	.01870	.00030	10.89340	-63900
36.200	16.000	.02210	.02830	.06950	.09070	.02030	.00050	10.89760	-63520
36.310	20.000	.04840	.02530	.06160	.13780	.02250	.00060	10.91060	-65160
	GRADIENT	.00045	.00007	.00008	.00243	.00159	.00002	.00000	.00351

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CA11 ( UHAL1146 )

PAGE 126

CALLUHAL1146(INT)KIH15.7V9.4 AT70AT71 T28.1 (AG0000) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
LREF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = -1.930  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 80/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHAM	CNT	CAT	CLMT	CYT	CYNT	CBLT	BETA	ALPHAT	DPI
35.970	-4.440	-00930	.02930	-.04850	.00200	-.00020	-.00010	.00000	-6.49540	-.59460
35.950	-2.250	-00700	.02950	-.03500	.00040	.00010	.00000	.00000	-4.23680	-.56170
35.940	-.070	-00750	.03010	-.02330	.00290	.00010	.00000	.00000	-2.09840	-.57650
35.940	2.080	-00530	.02920	-.01290	.00170	.00010	.00000	.00000	.05560	-.59500
35.940	4.230	-00360	.02930	.00080	.00300	.00010	.00000	.00000	2.22500	-.60380
35.940	6.380	-00080	.02940	.01470	.00410	.00020	.00000	.00000	4.39370	-.62130
35.950	8.520	.00210	.02910	.03140	.00790	.00040	.00000	.00000	6.56640	-.62210
35.970	10.650	.00280	.02880	.04950	.00440	.00000	.00010	.00000	8.72330	-.62660
36.030	12.780	.00610	.02820	.05940	.00550	.00020	.00000	.00000	10.85540	-.64110
36.120	14.890	.01170	.03180	.07580	.00850	.00030	.00000	.00000	12.99550	-.66950
36.230	16.960	.01590	.02630	.08830	.00870	.00010	.00000	.00000	15.07080	-.69260
36.340	18.950	.02000	.02560	.10190	.01000	.00040	.00010	.00000	17.08830	-.71940
36.460	20.910	.02180	.02520	.11270	.00890	.00000	.00010	.00000	19.05340	-.73240
36.580	22.940	.02430	.02460	.12370	.01210	.00030	.00000	.00000	21.09830	-.75200
36.690	24.960	.03260	.02400	.13710	.01100	.00020	.00010	.00000	23.14150	-.76500
	GRADIENT	.00060	-.00001	.00557	.00015	.00003	.00001	.00000	1.00568	-.00608

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 127

CALL UHAL1146 (INT) K1H15.6V9.1C1V11 AT86AT87 T28.1

(AG0099) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
 LREF = 327.7800 IN.  
 BREF = 2349.0000 IN.  
 SCALE = .0400

XMRP = 1348.0000 IN. XT  
 YMRP = .0000 IN. YT  
 ZMRP = 402.0000 IN. ZT

## PARAMETRIC DATA

BETA = .000 STAB = -1.960  
 ELV-1B = .000 ELV-08 = .000  
 RUJ-U = .000 RUJ-L = .000  
 ITANK = .000 RTANK = .000

RUN NO. 99/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHAT	CNT	CAT	CLMT	CYT	CYNT	CBLT	BETA	ALPHAT	DPI
36.030	-4.440	-0.02580	.00130	-.03960	.00540	.00100	-.00010	.00000	-6.46680	-4.9730
36.000	-2.250	-0.01890	.00240	-.02980	-.00030	.00060	.00000	.00000	-4.27800	-4.9780
35.990	-.070	-0.01770	.00410	-.02230	.00140	.00070	.00000	.00000	-2.08760	-5.0760
35.990	2.080	-0.01270	.00750	-.01150	.00180	.00090	.00000	.00000	.08440	-.5220
35.990	4.230	-0.0860	.01040	-.00120	-.00010	.00050	.00010	.00000	2.22640	-.55140
35.990	6.370	-0.00370	.01160	.00940	.00100	.00070	.00010	.00000	4.38800	-.54170
35.990	8.520	.00010	.01170	.02090	.00040	.00070	.00010	.00000	6.55190	-.55040
36.020	10.650	.00460	.01230	.03330	-.00050	.00080	.00010	.00000	8.69640	-.55840
36.080	12.780	.01180	.01230	.04680	-.00180	.00000	.00020	.00000	10.83040	-.61210
36.170	14.890	.01850	.01310	.05780	.00110	.00070	.00020	.00000	12.95090	-.63360
36.290	16.960	.01720	.02050	.00480	-.00070	.00000	.00020	.00000	14.94090	-.14370
36.410	18.950	.2720	-.01170	.07620	.00220	-.00010	.00020	.00000	17.03070	-.69880
36.530	20.910	.03560	-.01320	.08750	-.00020	-.00060	.00030	.00000	19.00030	-.71180
36.660	22.930	.04250	.02230	.09660	.00500	.00010	.00030	.00000	21.03820	-.72940
36.800	24.960	.04970	-.01890	.10560	.00120	-.00020	.00030	.00000	23.07490	-.74470
	GRADIENT	.00137	.00107	.00439	-.00041	-.00003	.00002	.00000	1.00271	-.00611

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 OF POOR QUALITY

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 128

CALLUMAL1146(INT)K1H15.6V9.ICIV11 AT86AT87 T23.1 (AG0100) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1348.0000 IN. XT  
YMRP = .0000 IN. YT  
ZMRP = 402.0000 IN. ZT

## PARAMETRIC DATA

ALPHAM = 2.000 STAB = -1.960  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
JTANK = .000 RTANK = .000

RUN NO. 100/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	CNT	CAT	CLMT	CYT	CYNT	CBLT	ALPHAM	ALPHAT	DP1
36.300	-20.000	-04740	.01430	-.02970	.13670	.02300	.00090	2.08000	.06890	-.48210
36.180	-16.000	-.03310	.01740	-.02390	.09370	.01990	.00070	2.08000	.06450	-.48660
36.130	-14.000	-.02670	.01900	-.01960	.06930	.01780	.00050	2.08000	.06520	-.48430
36.090	-12.000	-.02140	.02050	-.01590	.05370	.01610	.00050	2.08000	.06590	-.48630
36.050	-10.000	-.01780	.01820	-.01540	.03820	.01390	.00030	2.08000	.06330	-.49510
36.020	-8.000	-.01320	.01680	-.01390	.02680	.01130	.00030	2.08000	.06140	-.49550
36.000	-6.000	-.00880	.01500	-.01320	.02000	.00900	.00020	2.08000	.05810	-.50550
35.990	-4.000	-.00830	.01250	-.01230	.01440	.00680	.00020	2.08000	.05910	-.51540
35.990	-3.000	-.01010	.00720	-.01050	.01140	.00530	.00010	2.08000	.06350	-.51640
35.990	-2.000	-.01330	.00750	-.01000	.00390	.00350	.00010	2.08000	.06730	-.51150
35.990	-1.000	-.01060	.00730	-.00740	.00200	.00170	.00010	2.08000	.06860	-.51350
35.990	.000	-.01040	.00710	-.00820	.00050	.00010	.00000	2.08000	.06720	-.51250
35.990	1.000	-.01200	.00660	-.00900	.00470	.00200	.00000	2.08000	.06750	-.50960
35.990	2.000	-.01050	.00720	-.01090	.00430	.00370	.00000	2.08000	.06320	-.50960
35.990	3.000	-.00950	.00900	-.01060	.00840	.00530	.00010	2.08000	.06270	-.51350
35.990	4.000	-.01280	.00730	-.01360	.01560	.00690	.00010	2.08000	.06140	-.50570
36.000	6.000	-.01210	.01350	-.01150	.01990	.00960	.00020	2.08000	.06390	-.49870
36.020	8.000	-.01830	.01430	-.01380	.02950	.01220	.00030	2.08000	.06610	-.49260
36.050	10.000	-.02280	.01700	-.00870	.03890	.01380	.00030	2.08000	.07820	-.48540
36.080	12.000	-.03020	.01810	-.00960	.05190	.01570	.00030	2.08000	.08370	-.47720
36.130	14.000	-.03560	.01280	-.01280	.06950	.01780	.00040	2.08000	.08400	-.47760
36.180	16.000	-.04860	.01880	-.02030	.08680	.01950	.00050	2.08000	.08460	-.47010
36.290	20.000	-.07130	.00950	-.03550	.13290	.02340	.00070	2.08000	.08210	-.45620
GRADIENT		-.00020	-.00028	-.00015	-.00337	-.00174	-.00003	-.00000	-.00004	-.00092

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UMAL1146 )

PAGE 129

CALLUMAL1146(INT)KIH15.6V9.1CIV11 AT86AT87 T28.1

( AGO101 ) ( 14 NOV 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
LPEF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

PARAMETRIC DATA

ALPHA = 6.000 STA9 = -1.960  
ELV-18 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 101/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	CNT	CAT	CLMT	CYT	CYNT	CBLT	ALPHAN	ALPHAT	DPI
36.310	-20.000	-.05110	.00630	-.01080	.1250	.02020	.00090	6.37000	4.40150	-50700
36.190	-16.000	-.02410	.01720	.00440	.07960	.01740	.00070	6.37000	4.39960	-51450
36.140	-14.000	-.01450	.01400	.01170	.05510	.01540	.00060	6.37000	4.40170	-50740
36.100	-12.000	-.01310	.01560	.00920	.03790	.01390	.00040	6.37000	4.39660	-51580
36.060	-10.000	-.00560	.01510	.01100	.02590	.01190	.00040	6.37000	4.39230	-53090
36.030	-8.000	-.00320	.01620	.01340	.01320	.01020	.00030	6.37000	4.39370	-53130
36.010	-6.000	-.00430	.01720	.01220	.00650	.00790	.00030	6.37000	4.39280	-53260
36.000	-4.000	-.00380	.01470	.01200	.00480	.00600	.00020	6.37000	4.39190	-53180
35.990	-3.000	-.00420	.01480	.01260	.00480	.00470	.00020	6.37000	4.39320	-52900
35.990	-2.000	-.00480	.01470	.01120	.00340	.00290	.00020	6.37000	4.39170	-52320
35.990	-1.000	-.00460	.01260	.01260	.00240	.00150	.00010	6.37000	4.39360	-52220
35.990	.000	-.00270	.01230	.01230	.00170	.00010	.00010	6.37000	4.39140	-52900
35.990	1.000	-.00540	.01200	.00960	-.00050	-.00140	.00000	6.37000	4.38970	-52710
35.990	2.000	-.00460	.01200	.01180	-.00820	-.00310	.00000	6.37000	4.39250	-52220
35.990	3.000	-.00500	.01270	.01040	-.01030	-.00470	.00000	6.37000	4.39070	-53860
36.000	4.000	-.00230	.01440	.01400	-.00810	-.00580	.00000	6.37000	4.39360	-53190
36.010	6.000	-.00210	.01530	.01360	-.00830	-.00830	-.00010	6.37000	4.39300	-54040
36.030	8.000	-.00340	.01900	.01410	-.01580	-.01060	-.00010	6.37000	4.39490	-52840
36.060	10.000	-.00730	.01550	.01690	-.02270	-.01190	-.00010	6.37000	4.40230	-52020
36.100	12.000	-.01500	.01360	.01620	-.03500	-.01380	-.00020	6.37000	4.40890	-49830
36.130	14.000	-.02210	.01120	.00980	-.04900	-.01540	-.00020	6.37000	4.40570	-49020
36.190	16.000	-.03270	.01170	.00410	-.06570	-.01720	-.00030	6.37000	4.40700	-47970
36.300	20.000	-.04890	.00890	-.01110	-.10740	-.02190	-.00050	6.37000	4.39900	-48590
	GRADIENT	.00005	-.00023	-.00001	-.00205	-.00150	-.00003	.00000	-.00005	-.00065

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 130

CALL UHAL1146 (INT) KIH15.6V9.1CIV11 AT86AT87 T28.1

(AG0102) ( 14 NOV 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XPRP = 1348.0000 IN. XT  
LREF = 327.7800 IN. YPRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZPRP = 402.0000 IN. ZT  
SCALE = .0400

## PARAMETRIC DATA

ALPHAM = 12.000 STAB = -1.960  
ELV-1B = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 102/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	CNT	CAT	CLMT	CYT	CYNT	CBLT	ALPHAM	ALPHAT	DPI
36.410	-20.000	-.04460	-.00210	.03860	.12120	.01980	.00090	12.77000	10.87120	-.55460
36.290	-16.000	-.02380	.00380	.04900	.07160	.01610	.00070	12.78000	10.86730	-.56220
36.240	-14.000	-.01330	.00680	.05390	.05520	.01460	.00060	12.78000	10.86490	-.56110
36.200	-12.000	-.00870	.00720	.05730	.04390	.01340	.00050	12.78000	10.86570	-.55780
36.160	-10.000	-.00140	.00870	.05790	.02590	.01160	.00040	12.78000	10.85970	-.55850
36.130	-8.000	.01100	.01240	.05540	.00520	.00790	.00040	12.78000	10.84420	-.56180
36.110	-6.000	.01110	.01420	.05400	.00060	.00670	.00030	12.78000	10.84210	-.57280
36.100	-4.000	.00750	.01490	.05250	-.00580	.00410	.00020	12.78000	10.84320	-.57100
36.090	-3.000	.01050	.01430	.05070	-.00450	.00320	.00020	12.78000	10.83760	-.56920
36.090	-2.000	.01060	.01480	.05370	-.00560	.00140	.00020	12.78000	10.84200	-.56920
36.080	-1.000	.00950	.01450	.05110	-.00160	.00070	.00010	12.78000	10.83930	-.56260
36.080	.000	.00980	.01360	.05150	.00240	.00030	.00010	12.78000	10.83780	-.56160
36.080	1.000	.01370	.01420	.05370	.00370	.00120	.00010	12.78000	10.83910	-.55870
36.090	2.000	.01440	.01440	.05330	.00490	.00210	.00010	12.78000	10.83780	-.57410
36.090	3.000	.01130	-.01290	.05080	.01020	.00270	.00000	12.78000	10.83660	-.56540
36.090	4.000	.01210	.01500	.05230	.00880	.00430	.00010	12.78000	10.83850	-.58090
36.100	6.000	.01220	.01340	.05240	.01150	.00580	.00010	12.78000	10.83850	-.58270
36.120	8.000	.01400	.01140	.05640	.00660	.00760	.00010	12.78000	10.84300	-.57070
36.150	10.000	.00930	.01002	.05580	-.00420	.00930	.00010	12.78000	10.84650	-.55850
36.190	12.000	-.00840	.00130	.05450	-.02930	.01300	.00020	12.78000	10.86110	-.54540
36.220	14.000	-.01810	.00250	.04980	-.04190	.01430	.00020	12.78000	10.86300	-.54790
36.270	16.000	-.02190	-.00530	.04280	-.05600	.01610	.00010	12.78000	10.85590	-.54230
36.380	20.000	-.04460	-.00330	.02260	-.09290	.01950	-.00020	12.77000	10.84650	-.53580
GRADIENT		.00054	-.00137	.00002	.00209	-.00100	-.00002	.00000	-.00050	-.00057

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TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 131

CALLUNAL1146 (INT)K) V9.1 AT70AT71 T28.1 (B00072) ( 20 OCT 75 )

REFERENCE DATA

SREF = 9500.0000 SQ.FT. XMRP = 1348.0300 IN. XT  
LREF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 RUO-U = .000  
RUO-L = .000 ITANK = .000  
RTANK = .000

RUN NO. 72/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	DP1	DP2	DP3	DP4	CYN	CBL	BETA	ALPHA	DCA
35.970	-4.450	-65870	-67430	-56160	-66940	-00030	-00010	.00000	-6.50570	.02990
35.940	-2.270	-66020	-67580	-66020	-67480	-00050	-00010	.00000	-4.31080	.03060
35.930	-.090	-67210	-68280	-66920	-67990	-00010	-00000	.00000	-2.11070	.03000
35.930	2.060	-68280	-69450	-67890	-69350	-00000	-00000	.00000	.04702	.02900
35.930	4.210	-69160	-71110	-70230	-70810	-00020	-00010	.00000	2.20310	.02860
35.930	6.360	-71500	-72570	-70620	-71980	-00010	-00000	.00000	4.38230	.02780
35.940	8.500	-71960	-73030	-71380	-72350	-00030	-00010	.00000	6.54700	.02700
35.960	10.630	-71340	-73090	-72510	-73970	-00000	-00010	.00000	8.69640	.02580
36.010	12.760	-73960	-76100	-73860	-75320	-00030	-00010	.00000	10.83520	.02540
36.090	14.880	-74770	-76610	-75450	-77770	-00040	-00000	.00000	12.97020	.02440
36.200	16.940	-77150	-79180	-77050	-78890	-00050	-00000	.00000	15.05680	.02330
36.310	18.950	-78270	-80100	-78360	-80000	-00050	-00000	.00000	17.07150	.02260
36.410	20.910	-79300	-81320	-79300	-80940	-00010	-00000	.00000	19.06130	.02540
36.510	22.950	-79850	-81860	-79760	-81770	-00060	-00000	.00000	21.11440	.02050
36.610	24.990	-80110	-82310	-80300	-81930	-00070	-00000	.00000	23.15830	.01930
	GRADIENT	-00408	-00426	-00462	-00443	-00002	-00002	.00000	1.00580	-00019

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TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 132

CALLUHAL1146 (INT)KIH15.1 AT70AT71 T28.1 (B00073) ( 20 OCT 75 )

## REFERENCE DATA

XREF = 5500.0000 SQ.FT.  
 YREF = 327.7800 IN.  
 ZREF = 2348.0000 IN.  
 SCALE = .0400

XPRP = 1348.0000 IN. XT  
 YPRP = .0000 IN. YT  
 ZPRP = 402.0000 IN. ZT

## PARAMETRIC DATA

ALPHA = 6.000 STAB = -1.930  
 ELV-18 = .000  
 ITANK = .000 RTANK = .000

RUN NO. 73/ 0 RUN = .00 GRADIENT INTERVAL = -5.00/ 5.00

BETA	DP1	DP2	DP3	DP4	CYN	CBL	ALPHAH	ALPHAT	DCA
35.150	-1.45310	-1.46180	-1.45990	-1.47340	.02690	.00100	6.37000	4.41800	.02620
35.060	-1.56780	-1.58040	-1.57650	-1.59500	.02320	.00060	6.37000	4.40010	.02900
35.030	-1.57310	-1.58860	-1.58440	-1.57600	.02100	.00050	6.37000	4.40360	.03060
35.000	-1.56190	-1.57460	-1.56390	-1.57750	.01900	.00040	6.37000	4.40470	.03140
35.980	-1.56220	-1.57680	-1.56810	-1.57970	.01650	.00040	6.38000	4.40330	.03070
35.960	-1.56450	-1.56840	-1.55960	-1.57620	.01400	.00030	6.38000	4.39840	.02990
35.950	-1.57920	-1.58220	-1.56370	-1.58120	.01000	.00020	6.38000	4.39340	.03000
35.940	-1.57830	-1.58610	-1.58000	-1.58800	.00660	.00010	6.38000	4.39660	.02970
35.940	-1.56770	-1.59300	-1.57450	-1.57260	.00500	.00020	6.38000	4.39740	.02920
35.930	-1.57160	-1.58820	-1.58200	-1.58430	.00320	.00010	6.38000	4.39870	.02910
35.930	-1.57180	-1.59030	-1.58050	-1.57960	.00150	.00010	6.38000	4.39710	.02880
35.940	-1.57370	-1.59130	-1.56890	-1.56300	.00050	.00000	6.38000	4.39420	.02830
35.940	-1.55930	-1.57260	-1.56580	-1.56480	.00200	.00000	6.38000	4.39140	.02870
35.940	-1.55020	-1.55020	-1.55110	-1.55990	.00370	.00000	6.38000	4.39070	.02860
35.940	-1.55600	-1.56870	-1.55410	-1.55800	.00550	.00000	6.38000	4.39520	.02840
35.950	-1.54710	-1.56030	-1.54710	-1.55300	.00750	.00000	6.38000	4.39750	.02870
35.950	-1.55200	-1.55980	-1.54910	-1.55590	.01070	.00010	6.38000	4.40520	.02930
35.960	-1.52170	-1.51780	-1.52070	-1.53430	.01430	.00020	6.38000	4.41210	.02960
35.980	-1.50090	-1.48540	-1.50580	-1.50000	.01680	.00030	6.38000	4.41400	.02990
36.000	-1.47730	-1.50160	-1.48610	-1.49190	.01940	.00040	6.37000	4.42410	.03000
36.020	-1.46250	-1.47030	-1.47030	-1.47030	.02170	.00050	6.37000	4.42440	.02830
36.050	-1.47570	-1.47960	-1.48250	-1.48250	.02410	.00060	6.37000	4.42380	.02780
36.130	-1.48430	-1.48430	-1.47760	-1.47560	.02760	.00070	6.37000	4.43940	.02350
GRADIENT	.00358	.00446	.00508	.00412	.00175	.00002	.00000	.00041	.00013

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TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 133

CALL UNAL1146 (INT) KIM15.7V9.4 AT70AT71 128.1

(B00077) ( 20 OCT 75 )

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
 LREF = 327.7800 IN. YMRP = .0000 IN. YT  
 BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
 SCALE = .0400

## PARAMETRIC DATA

ALPHA = 2.000 STAB = -1.930  
 ELV-1B = .000 ELV-08 = .000  
 RUC-U = .000 RUC-L = .000  
 ITANK = .000 RTANK = .000

RUN NO. 77/ 0 RN/ = .30 GRADIENT INTERVAL = -5.00/ 5.00

Q	SETA	DP1	DP2	DP3	DP4	CYN	CEL	ALPHA	ALPHAT	DCA
35.230	-20.000	-60570	-58930	-56800	-58730	.02430	.00100	2.08000	10350	.02580
36.110	-16.000	-61450	-62510	-61160	-62320	.02120	.00060	2.08000	.08560	.02890
36.050	-14.000	-62000	-64350	-61820	-63470	.01920	.00050	2.08000	.07560	.03000
36.020	-11.900	-62180	-62860	-61990	-63250	.01680	.00050	2.08000	.06570	.03370
35.970	-10.000	-62330	-63500	-62330	-63500	.01460	.00030	2.08000	.05410	.02910
35.970	-8.000	-62440	-64410	-62660	-63730	.01160	.00030	2.08000	.05920	.02790
35.960	-6.000	-63850	-65010	-63850	-64820	.00910	.00030	2.08000	.06050	.02850
35.940	-4.000	-63590	-64660	-63690	-64950	.00610	.00020	2.08000	.05760	.02930
35.940	-3.000	-63590	-64370	-63390	-63790	.00480	.00020	2.08000	.05690	.02860
35.940	-2.000	-62910	-63690	-62320	-63690	.00280	.00020	2.08000	.05810	.02870
35.940	-1.000	-61320	-63100	-62130	-63100	.00110	.00010	2.08000	.05370	.02910
35.940	.000	-62130	-62710	-61350	-62710	.00060	.00000	2.08000	.05760	.02890
35.940	1.000	-61150	-62420	-59960	-62030	.00250	.00000	2.08000	.05690	.02900
35.940	2.000	-60570	-61450	-59990	-61060	.00400	.00000	2.08000	.05400	.02900
35.950	2.900	-59790	-61150	-60260	-61060	.00530	.00000	2.08000	.05490	.02910
35.950	4.000	-59370	-61140	-60360	-61140	.00730	.00010	2.08000	.05720	.02950
35.960	6.000	-60340	-61700	-60930	-60930	.01070	.00020	2.08000	.05920	.03050
35.970	8.000	-61490	-63730	-61780	-62950	.01340	.00020	2.08000	.06490	.03110
35.990	10.000	-63790	-64180	-63110	-64670	.01590	.00020	2.08000	.07800	.03200
36.030	12.000	-63140	-63670	-62850	-63140	.01830	.00040	2.08000	.08960	.03180
36.070	14.000	-63360	-63720	-63360	-64330	.02020	.00040	2.08000	.09860	.03120
36.110	16.000	-64070	-64360	-63580	-64070	.02220	.00060	2.08000	.10330	.03010
36.230	20.000	-63080	-63560	-63470	-64050	.02600	.00080	2.08000	.13440	.02690
GRADIENT		.00531	.00484	.00481	.00499	.00172	.00004	.00000	.00031	.00003

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OF POOR QUALITY

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TABULATED SOURCE FORCE DATA - CALL (UMAL1146)

PAGE 134

(BG0078) ( 20 OCT 75 )

CALLUMAL1146(INTIK1115.7V9.4 AT70AT71 128.1

## REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.00/0 IN. XT ALPHAB = 6.000 STAB = -1.530  
LREF = 327.7000 IN. YMRP = .00000 IN. YT ELV-18 = .000 ELV-08 = .000  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT RUD-U = .000 RUD-L = .000  
SCALE = .0400 ITANK = .000 RTANK = .000

## PARAMETRIC DATA

RUN NO. 78/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

0	BETA	DP1	DP2	DP3	DP4	CYN	CSL	ALPHAB	ALPHA	DCA
35.240	-20.000	-60550	-59590	-59910	-60350	.02320	.00050	6.37000	4.42170	.02990
35.120	-15.000	-63180	-64240	-63090	-63950	.02040	.00070	6.37000	4.41510	.03070
35.070	-14.000	-63360	-64910	-64040	-64040	.01910	.00080	6.37000	4.41010	.03120
35.030	-12.000	-64300	-64300	-64300	-64500	.01700	.00090	6.37000	4.40310	.03190
35.000	-10.000	-64550	-64460	-63970	-64160	.01480	.00040	6.37000	4.39350	.03030
35.980	-8.000	-64100	-64980	-63710	-65070	.01210	.00030	6.37000	4.39640	.03050
35.950	-6.000	-63460	-65110	-63750	-63940	.00930	.00020	6.38000	4.39260	.02890
35.950	-4.000	-63960	-64540	-63860	-64060	.00610	.00020	6.38000	4.39260	.02930
35.940	-3.000	-62620	-64170	-63300	-63200	.00460	.00020	6.38000	4.39690	.02930
35.940	-2.000	-62620	-63000	-62420	-63300	.00330	.00020	6.38000	4.39770	.02840
35.940	-1.000	-62230	-63200	-62130	-63000	.00110	.00010	6.38000	4.39240	.02870
35.940	1.000	-62030	-62420	-62130	-63100	.00050	.00000	6.38000	4.39540	.02830
35.940	2.000	-60280	-62320	-60860	-61640	.00220	.00010	6.38000	4.39930	.02850
35.950	3.000	-59680	-61250	-60280	-61350	.00380	.00000	6.38000	4.39130	.02900
35.950	4.000	-59000	-60650	-59090	-60360	.00540	.00000	6.38000	4.39280	.02900
35.960	5.000	-59470	-59680	-59090	-59680	.00740	.00000	6.38000	4.39330	.02930
35.980	6.000	-59720	-60930	-58980	-59170	.01050	.00010	6.38000	4.40010	.02980
36.000	8.100	-59980	-60600	-60020	-61180	.01330	.00020	6.38000	4.40520	.03110
36.030	10.000	-60130	-60860	-59110	-60270	.01580	.00030	6.37000	4.40940	.03200
36.070	12.000	-60450	-60520	-60220	-60220	.01770	.00030	6.37000	4.41710	.03240
36.130	14.000	-60460	-60450	-59960	-60540	.02020	.00050	6.37000	4.42070	.03150
36.230	16.000	-62790	-61920	-60270	-62590	.02220	.00060	6.37000	4.42720	.02960
	20.000	-60570	-63850	-63080	-63270	.02560	.00070	6.37000	4.45010	.02580
	GRADIENT	.00570	.00573	.00626	.00522	.00169	.00003	.00000	.00027	.00005

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TABULATED SOURCE FORCE DATA - CA1' ( UHAL1146 )

PAGE 135

CALL UHAL1146 (INT)K1415.7V9.4 AT70AT71 T29.1 (8G0079) ( 20 OCT 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
LREF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

PARAMETRIC DATA

ALPHAW = 12.000 STAB = -1.930  
ELV-1B = .000 ELV-0B = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

Q	BETA	DPI	DP2	DP3	DP4	CYN	CBL	ALPHAW	ALPHAT	DCA
36.340	-20.000	-60960	-60960	-60290	-50580	.02180	.00100	12.78000	10.88630	.02510
36.220	-16.000	-60880	-60970	-60880	-61160	.01280	.00060	12.78000	10.87810	.02860
36.170	-14.000	-62800	-63470	-63280	-63570	.01740	.00050	12.78000	10.86910	.02950
36.120	-12.000	-62980	-64240	-64050	-63950	.01590	.00040	12.78000	10.86420	.02910
36.090	-10.000	-63520	-64490	-63910	-64970	.01410	.00040	12.78000	10.85860	.02860
36.070	-8.000	-63750	-64330	-63940	-64230	.01150	.00030	12.78000	10.85750	.02800
36.050	-6.000	-64270	-63980	-63490	-64370	.00870	.00020	12.78000	10.85770	.02830
36.040	-4.000	-63610	-64190	-63800	-63410	.00640	.00020	12.78000	10.85710	.02730
36.030	-3.000	-64110	-64400	-63720	-64110	.00420	.00010	12.78000	10.86070	.02790
36.030	-2.000	-64400	-65080	-63620	-64010	.00310	.00020	12.78000	10.86330	.02750
36.030	-1.000	-63920	-64110	-63820	-64300	.00170	.00010	12.78000	10.85840	.02710
36.030	.000	-64400	-65280	-64500	-64790	.00010	.00010	12.78000	10.86090	.02750
36.030	1.000	-64210	-65570	-64890	-64980	.00010	.00010	12.78000	10.85740	.02710
36.030	2.000	-67510	-66150	-65860	-65960	.00350	.00010	12.78000	10.85930	.02790
36.030	3.000	-55960	-66050	-66830	-66930	.00500	.00000	12.78000	10.85680	.02810
36.030	4.000	-65860	-66540	-65570	-66050	.00640	.00000	12.78000	10.85780	.02800
36.040	6.000	-65160	-65840	-65450	-65060	.00940	.00000	12.78000	10.85830	.02850
36.060	8.000	-64540	-65420	-64740	-65030	.01190	.00010	12.78000	10.86140	.02900
36.080	10.000	-64020	-64410	-63730	-64310	.01460	.00020	12.78000	10.86750	.02940
36.110	12.000	-63410	-64450	-63680	-63970	.01720	.00030	12.78000	10.87060	.02980
36.150	14.000	-63900	-64190	-63700	-63610	.01870	.00030	12.78000	10.89340	.02970
36.200	16.000	-63520	-64290	-63520	-63810	.02030	.00050	12.78000	10.89760	.02830
36.310	20.000	-65160	-66310	-65930	-66510	.02250	.00060	12.78000	10.91060	.02530
	GRADIENT	-00351	-00239	-00366	-00393	-00159	-00002	.00000	-.00030	.00007

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TABULATED SOURCE FORCE DATA - CALL ( UNAL1146 )

PAGE 136

CALLUNAL1146(INT)KIH15.7V9.4 AT70AT71 T28.1 (BGO080) ( 20 OCT 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1348.0000 IN. XT  
YMRP = .0000 IN. YT  
ZMRP = 402.0000 IN. ZT

PARAMETRIC DATA

BETA = .000 STAB = -1.930  
ELV-19 = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 80/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHAM	DP1	DP2	DP3	DP4	CYN	CBL	BETA	ALPHAT	DCA
35.970	-4.440	-55460	-56140	-55460	-55170	-.00020	-.00010	.00000	-6.49540	.02930
35.950	-2.250	-56170	-56560	-56370	-56370	.00010	.00000	.00000	-4.29670	.02930
35.940	-.070	-57650	-57650	-57840	-56580	.00010	.00000	.00000	-2.02640	.03010
35.940	2.080	-59500	-58820	-59110	-60080	.00010	.00000	.00000	.05560	.02920
35.940	4.230	-60380	-60860	-59990	-59690	.00010	.00000	.00000	2.22500	.02930
35.940	6.380	-62130	-61740	-62130	-62130	.00020	.00006	.00000	4.39370	.02940
35.950	8.520	-62210	-62110	-62110	-61920	.00040	.00000	.00000	6.56640	.02910
35.970	10.650	-62660	-63240	-63050	-63240	.00000	.00010	.00000	8.72330	.02880
36.030	12.780	-64110	-64010	-63820	-63720	.00020	.00000	.00000	10.89540	.02820
36.120	14.890	-66950	-66860	-66370	-66570	.00030	.00000	.00000	12.99550	.03180
36.270	16.960	-69260	-68650	-69260	-68680	.00010	.00000	.00000	15.07080	.02630
36.340	18.950	-71940	-72330	-72330	-71940	-.00040	.00010	.00000	17.08830	.02560
36.460	20.910	-73240	-73530	-73630	-73630	.00000	.00010	.00000	19.05340	.02520
36.580	22.940	-75200	-75110	-75490	-75110	.00030	.00000	.00000	21.09830	.02480
36.690	24.960	-76500	-76880	-76690	-76690	.00020	.00010	.00000	23.14150	.02400
	GRADIENT	-.00608	-.00539	-.00545	-.00588	.00003	.00001	.00000	1.00568	-.00001

DATE 15 NOV 75

TABULATED SOURCE FORCE DATA - CALL ( UHAL1146 )

PAGE 137

CALL UHAL1146 (INT) KIH15.6V9.1C1V11 AT68AT87 128.1

(860099) ( 20 OCT 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
LREF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

PARAMETRIC DATA

BETA = .000 STAB = -1.950  
ELV-1B = .000 ELV-08 = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 99/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	ALPHA	DP1	DP2	DP3	DP4	CYN	CBL	BETA	ALPHAT	DCA
36.03C	-4.440	-49730	-50320	-50120	-50320	.00100	-.00010	.00000	-6.46680	.00130
36.000	-2.250	-49780	-50840	-50160	-50360	.00060	.00000	.00000	-4.27800	.00240
35.990	-.070	-50760	-51730	-50760	-50860	.00070	.00000	.00000	-2.08760	.00410
35.990	2.080	-52220	-53580	-53100	-53390	.00090	.00000	.00000	.06440	.00750
35.990	4.230	-55140	-55820	-55140	-54940	.00050	.00010	.00000	2.22640	.01040
35.990	6.370	-54170	-55040	-54170	-54550	.00070	.00010	.00000	4.38800	.01160
35.990	8.520	-55040	-55720	-55330	-55230	.00070	.00010	.00000	6.55180	.01170
36.020	10.650	-56840	-58010	-56550	-57130	.00080	.00010	.00000	8.69640	.01230
36.080	12.780	-61210	-61690	-60730	-60720	.00000	.00020	.00000	10.83040	.01230
36.170	14.890	-63380	-64440	-63670	-65020	.00070	.00020	.00000	12.95090	.01310
36.290	16.960	-14370	-66450	-68280	-67410	-.00800	.00020	.00000	14.94090	.02050
36.410	18.950	-69880	-71130	-69590	-70270	-.00010	.00020	.00000	17.03070	-.01170
36.530	20.910	-71180	-72620	-71280	-72140	-.00060	.00030	.00000	19.00030	-.01320
36.660	22.930	-72940	-74270	-73700	-73990	.00010	.00030	.00000	21.03820	.02230
36.800	24.960	-74470	-76460	-75510	-76080	-.00020	.00030	.00000	23.07490	-.01890
	GRADIENT	-.00611	-.00633	-.00598	-.00565	-.00003	.00002	.00000	1.00271	.00107

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TABULATED SOURCE FORCE DATA - CALI ( UHAL1146 )

PAGE 170

CA11UHAL1146(INT)K1H15.6V9.1CIV11 AT6SAT87 T28.1

(BGO100) ( 20 OCT 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT.  
LREF = 327.7800 IN.  
BREF = 2348.0000 IN.  
SCALE = .0400

XMRP = 1348.0000 IN. XT  
YMRP = .0000 IN. YT  
ZMRP = 402.0000 IN. ZT

PARAMETRIC DATA

ALPHAH = 2.000 STAB = -1.960  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 100/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	DP1	DP2	DP3	DP4	CYN	CBL	ALPHAH	ALPHAT	DCA
36.300	-20.000	-48210	-50230	-48500	-50140	.02300	.00090	2.08000	.08990	.01430
36.180	-16.000	-48660	-50790	-49040	-50690	.01990	.00070	2.08000	.08450	.01740
36.130	-14.000	-48430	-50760	-49020	-50560	.01780	.00050	2.08000	.08520	.01900
36.090	-12.000	-48680	-51110	-49650	-51010	.01610	.00050	2.08000	.08590	.02050
36.050	-10.000	-49510	-51160	-49710	-51070	.01330	.00030	2.08000	.08330	.01820
36.020	-8.000	-49550	-51790	-50140	-51690	.01130	.00030	2.08000	.08140	.01680
36.000	-6.000	-50550	-52400	-50360	-52400	.00900	.00020	2.08000	.08100	.01500
35.990	-4.000	-51540	-54170	-52900	-53290	.00680	.00020	2.08000	.08100	.01250
35.990	-3.000	-51640	-54070	-52610	-53290	.00530	.00010	2.08000	.08350	.00720
35.990	-2.000	-51150	-53190	-51930	-52800	.00350	.00010	2.08000	.08730	.00750
35.990	-1.000	-51350	-53390	-51540	-53000	.00170	.00010	2.08000	.08660	.00730
35.990	.000	-51250	-53390	-51540	-52710	.00010	.00000	2.08000	.08720	.00710
35.990	1.000	-50960	-52800	-51350	-52500	.00200	.00000	2.08000	.08750	.00660
35.990	2.000	-50960	-52710	-51540	-52800	.00370	.00000	2.08000	.08320	.00720
35.990	3.000	-51350	-53100	-51350	-52710	.00530	.00010	2.08000	.08270	.00900
35.990	4.000	-50570	-52800	-51540	-5210	.00690	.00010	2.08000	.08140	.00730
36.000	6.000	-49870	-51530	-50160	-52010	.00960	.00020	2.08000	.08390	.01350
36.020	8.000	-49260	-50910	-49840	-51400	.01220	.00030	2.08000	.08610	.01430
36.050	10.000	-48540	-50480	-48830	-50090	.01380	.00030	2.08000	.07820	.01700
36.080	12.000	-47720	-49760	-48110	-50150	.01570	.00030	2.08000	.08370	.01810
36.130	14.000	-47760	-49310	-48050	-49400	.01780	.00040	2.08000	.08400	.01880
36.180	16.000	-47010	-48750	-46920	-48460	.01950	.00050	2.08000	.08460	.01710
36.290	20.000	-45620	-47450	-46100	-46580	.02340	.00070	2.08000	.08210	.00950
	GRADIENT	.00092	.00166	.00170	.00069	.00174	.00003	.00000	.00004	.00028

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TABULATED SOURCE FORCE DATA - CALL ( UHAL11146 )

PAGE 139

CALLUMAL1146(INT)KIH15.6V9.ICIV11 AT86AT87 T28.1

(BGO101) ( 20 OCT 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
LREF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

PARAMETRIC DATA

ALPHAM = 6.000 STAB = -1.960  
ELV-IB = .000 ELV-OB = .000  
RUD-U = .000 RUD-L = .000  
ITANK = .000 RTANK = .000

RUN NO. 101/ 0 RN/L = .00 GRADIENT INTERVAL = -5.00/ 5.00

Q	BETA	DP1	DP2	DP3	DP4	CYN	CBL	ALPHAM	ALPHAT	DCA
36.310	-20.000	-50700	-52700	-52050	-53780	.02020	.00090	6.37000	4.40150	.00630
36.190	-16.000	-51450	-53190	-51840	-53960	.01740	.00070	6.37000	4.39960	.01720
36.140	-14.000	-50740	-52580	-50840	-53070	.01540	.00060	6.37000	4.40170	.01400
36.100	-12.000	-51580	-53610	-52350	-53220	.01390	.00040	6.37000	4.39860	.01560
36.080	-10.000	-53090	-54930	-52990	-54550	.01190	.00030	6.37000	4.39230	.01510
36.030	-8.000	-53130	-55560	-54010	-55560	.01020	.00030	6.37000	4.39370	.01620
36.010	-6.000	-53260	-55300	-54040	-55400	.00790	.00030	6.37000	4.39280	.01720
36.000	-4.000	-53180	-55320	-53760	-55510	.00600	.00020	6.37000	4.39190	.01470
35.990	-3.000	-52900	-54750	-53290	-54940	.00470	.00020	6.37000	4.39320	.01480
35.990	-2.000	-52320	-54170	-52800	-54170	.00290	.00020	6.37000	4.39170	.01470
35.990	-1.000	-52220	-54260	-52710	-54260	.00150	.00010	6.37000	4.39360	.01260
35.990	.000	-52900	-54460	-53000	-54370	.00010	.00010	6.37000	4.39140	.01230
35.990	1.000	-52710	-54460	-53290	-54750	.00000	.00000	6.37000	4.38970	.01200
35.990	2.000	-52220	-53780	-52610	-54260	.00310	.00000	6.37000	4.39250	.01200
35.990	3.000	-53190	-55040	-53190	-54940	.00470	.00000	6.37000	4.39070	.01270
36.000	4.000	-53860	-55510	-54340	-55610	.00580	.00000	6.37000	4.39360	.01440
36.010	6.000	-54040	-56080	-54330	-55880	.00830	.00010	6.37000	4.39300	.01530
36.030	8.000	-52840	-54690	-53230	-55080	.01060	.00010	6.37000	4.39490	.01900
36.060	10.000	-52020	-53870	-52310	-54060	.01190	.00010	6.37000	4.40290	.01550
36.100	12.000	-49830	-51770	-50410	-51670	.01380	.00020	6.37000	4.40890	.01360
36.130	14.000	-49020	-50760	-46330	-50860	.01540	.00020	6.37000	4.40570	.01120
36.190	16.000	-47970	-49710	-47970	-49510	.01720	.00030	6.37000	4.40700	.01170
36.000	20.000	-48590	-50420	-47240	-49460	.02190	.00050	6.37000	4.39300	.00890
GRADIENT		-0.0065	-0.0017	-0.0037	-0.0018	.00150	.00003	.00000	-0.0005	-0.00023

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TABULATED SOURCE FORCE DATA - CALL ( UVAL1146 )

PAGE 140

CALLUVAL1146(INT)K1H15.6V9.ICIV11 AT86AT87 T28.1

(BGO102) ( 20 OCT 75 )

REFERENCE DATA

SREF = 5500.0000 SQ.FT. XMRP = 1348.0000 IN. XT  
LREF = 327.7800 IN. YMRP = .0000 IN. YT  
BREF = 2348.0000 IN. ZMRP = 402.0000 IN. ZT  
SCALE = .0400

PARAMETRIC DATA

ALPHAM = 12.000 STAB = -1.960  
ELV-1B = .000 ELV-OB = .000  
RUD-U = .000 RUD-I = .000  
ITANK = .000 RTA'K = .000

Q	BETA	DP1	DP2	DP3	DP4	CYN	CBL	ALPHAM	ALPHAT	DCA
36.410	-20.000	-55460	-57670	-56620	-56900	.01980	.00090	12.77000	10.87120	-.00210
36.290	-16.000	-56220	-57670	-55940	-57770	.01610	.00070	12.78000	10.86730	.00380
36.240	-14.000	-56110	-57650	-56210	-58040	.01460	.00060	12.78000	10.85490	.00680
36.200	-12.000	-55780	-57910	-56460	-57810	.01340	.00050	12.78000	10.85570	.00720
36.160	-10.000	-55850	-57490	-56140	-57690	.01160	.00040	12.78000	10.85970	.00810
36.130	-8.000	-56180	-57640	-56760	-57830	.00790	.00030	12.78000	10.84420	.01240
36.110	-6.000	-57280	-59320	-57860	-59610	.00670	.00020	12.78000	10.84210	.01420
36.100	-4.000	-57100	-59140	-57680	-59240	.00410	.00020	12.78000	10.84320	.01490
36.090	-3.000	-56920	-58570	-57700	-58860	.00320	.00020	12.78000	10.83760	.01430
36.080	-2.000	-56920	-58770	-57600	-58770	.00140	.00020	12.78000	10.84200	.01480
36.080	-1.000	-56260	-58490	-57230	-58490	.00070	.00010	12.78000	10.83900	.01450
36.080	.000	-56160	-58200	-56550	-57910	.00030	.00010	12.78000	10.83930	.01360
36.080	1.000	-55870	-57810	-56750	-58010	.00120	.00010	12.78000	10.83910	.01420
36.090	2.000	-57410	-58860	-57410	-58860	.00210	.00010	12.78000	10.83780	.01440
36.090	3.000	-56540	-59150	-57700	-58960	.00270	.00000	12.78000	10.83660	-.01290
36.090	4.000	-58090	-60510	-58570	-59740	.00430	.00010	12.78000	10.83850	.01500
36.100	6.000	-58270	-60400	-58560	-60200	.00580	.00010	12.78000	10.83850	.01340
36.120	8.000	-57070	-59400	-57750	-59400	.00760	.00010	12.78000	10.84300	.01140
36.150	10.000	-58860	-57510	-56250	-57700	.00930	.00010	12.78000	10.84650	.01000
36.190	12.000	-54540	-55990	-54640	-56190	.01300	.00020	12.78000	10.86110	.00130
36.220	14.000	-54790	-56430	-54590	-56040	.01430	.00020	12.78000	10.86300	-.00250
36.270	16.000	-54230	-56350	-55680	-56350	.01610	.00010	12.78000	10.85590	-.00530
36.380	20.000	-53580	-55220	-53780	-55320	.01950	-.00020	12.77000	10.84650	-.00930
	GRADIENT	-.00057	-.00112	-.00045	-.00033	-.00100	-.00002	.00000	-.00050	-.00137